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20 June 1984



# USSR Report

## AGRICULTURE



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# AGRICULTURE

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22-24 April

LD250411 [Editorial Report] The following is a compilation of reports on agricultural developments in the USSR carried by Moscow Domestic Service in Russian on 22-24 April. Times of broadcasts are given in parentheses at the end of each item.

22 April

Ukraine farms are sowing corn on area of 1.2 million hectares. (2005 GMT)

Aviators are helping Bashkir ASSR farmers to maintain good work pace. When the roads were bad at the start of the spring they treated more than 400,000 hectares, almost a sixth of the entire area being cultivated. (2005 GMT)

23 April

Harrowing for moisture retention is underway in Kirovograd Oblast. (0001 GMT)

Spring grains have been sown on 1 million hectares in Saratov Oblast. (0001 GMT)

Farms in Orenburg Oblast are sowing in the southern rayons; about 6 million hectares have to be sown with grain and other crops. (0700 GMT)

Sugar-beet sowing has been carried out in only 7 days in the Kirghiz SSR. (2230 GMT)

24 April

In Saratov Oblast spring wheat will occupy 1.5 million hectares. (0001 GMT)

Harvesting of rape has begun in Dagenstan. (0204 GMT)

In Kirghizia sugar beet sowing has been completed: now sowing of cotton, corn, and vetetables is in progress. (0600 GMT)

In Belorussia potato planting is in full swing. (0600 GMT)

Fieldworkers in Taldy-Kurgan Oblast in Kazakhstan began sowing corn today on over 43,000 hectares. (1230 GMT)

The sowing of grain by mechanizers of Amur Oblast is taking place under complicated conditions. Spring has arrived here 3 weeks later than usual, and the precipitation which has fallen everywhere has led to considerable overwatering of fields. The experience of leading farms in the Amur area and teams working on the collective contracting method shows that in such a situation it is important to make use of every possible hour and to sow selectively, in conjunction with other agricultural methods. The Amur farmers are now to sell the state more than 400,000 metric tons of grain crops and almost 300,000 metric tons of soybeans. (2004 GMT)

Spring sowing is in progress in Aktyubinsk Oblast. (2300 GMT)

Rice sowing has begun in Dara Kalpak ASSR. (2300 GMT)

Cotton sowing has been completed in Azerbaijan. (2300 GMT)

25-26 April

LD270400 [Editorial Report] The following is a compilation of reports on agricultural developments in the USSR carried by Moscow Domestic Service in Russian on 25-26 April. Times of broadcasts are given in parentheses at the end of each item.

25 April

Leninabad Oblast is the first in Tajikistan to have completed sowing of cotton. High-yield types of seeds have been sown on more than 92,000 hectares. Farmers of Kurgan-Tyube Oblast are near to completion of cotton sowing. About 140,000 hectares have already been sown to cotton here. This year cotton growers of Tajikistan has undertaken to sell 910,000 metric tons of cotton to the state. (0001 GMT)

Sowing of early grain crops has begun in Mordovia. This year they will occupy about 400,000 hectares. (0204 GMT)

Corn sowing started in South Belorussia. (0600 GMT)

The sowing of spring crops has begun in Orenburg Oblast. Over 4 million hectares have to be sown with crops in the oblast. One million hectares of the Kuban Chernozem Zone, which is more than half the overall area planned, have been sown with spring crops. Sunflower, corn, and rice are now being sown there. Corn-sowing has also started on the Mozdok Steppes in North Osetia. Cotton is being sown in the Vakhsh Valley of Tajikistan. Over 300,000 hectares of the best fields in the republic are taken up with cotton. (1530 GMT)

The specialized combine for the production of fodder crop seeds in Pavlodar has dispatched the first lot of products to farmers. The capacity of the combine is 50,000 metric tons of sowing material a year. Several dozen highly

productive hybrids have been created here and the technology of growing many valuable grasses mastered. All the farms in the region round the Irtysh River in Pavlodar Oblast and a number of neighboring oblasts will now receive seeds from the combine. (1530 GMT)

A Kazakhstan Rayon has started sowing early cereals. Sowing of corn has started early in Maritime Kray. (1750 GMT)

26 April

Dushanbe: Cotton cultivation news. Cotton plantations in Tajikistan occupy more than 300,000 hectares of irrigated land. (0001 GMT)

Mass planting of trees has been completed to prevent soil erosion by wind and water in Belgorod Oblast. (0100 GMT)

Farms of Kostroma Oblast today began spring sowing. (0204 GMT)

Sowing has begun in southern regions of Semipalatinsk Oblast, Kazakhstan. This year the grain crop area of the oblast will exceed 1 million hectares. (0204 GMT)

Saratov Oblast: Sowing has been completed on half the spring crop area, which is more than 2 million hectares. (0400 GMT)

Kirovgrad Krasnaya Zvezda Combine completes delivery of agricultural equipment ahead of schedule for the spring sowing. More than 23,000 pieces of sowing equipment for various crops have been sent to agricultural workers. (1000 GMT)

Ukraine: North and west oblasts sowing maize. (1000 GMT)

Crimea: Next to plantations where the sowing of intertilled crops is underway the laying-in of fodder has been started. The sowing frontier has reached the northern regions. (1000 GMT)

27-29 April

LD300710 [Editorial Report] The following is a compilation of reports on agricultural developments in the USSR carried by Moscow Domestic Service in Russian on 27-29 April. Times of broadcasts are given in parentheses at the end of each item.

27 April

Mass sowing of corn has begun in the Ukraine. (0004 GMT)

Rice sowing has begun in Northern Turkmenia. (1300 GMT)

Two hundred fifty thousand hectares are allocated to corn for grain crops in Uzbekistan. Already 80 percent of the area has been sown. (1530 GMT)

Corn sowing has been completed in Ashkhabad Oblast.

28 April

Udmurtiya: Sowing has begun here. Spring crops to be sown on over 500,000 hectares here. Harrowing has been carried out on 500,000 hectares in Kurgan Oblast. (0001 GMT)

In the fields of the country: The high quality of the sowing and the harmonization of the work of the detachments and links working on the basis of collective contracts are the main element in the success of the Orel crop growers. The machine operators of the oblast have completed the sowing of early grain crops on an area of more than 500,000 hectares, sown to oats, barley, wheat, and other crops. Now the soil is being prepared for the sowing of late crops. (1530 GMT)

The presowing tilling of the soil has been completed on the first 500,000 hectares in Kuybyshev Oblast. Almost a third of the area allocated for early grain crops has been prepared. Spring has not been easy this year in the region. In most farms the reserves of moisture are 25-50 percent smaller than in ordianry years. Bearing this in mind, the crop growers reduced as much as possible the time taken by the work. (1530 GMT)

The machine-operators of Altay have blocked the moisture on 500,000 hectares. Seven million hectares of land is to be harrowed there in the minimum of time. (1530 GMT)

Mass planting of vines has begun today in Kazakhstan. The vine growers have decided to expand the area under vines by at least 2,000 hectares before the end of the year. (1530 GMT)

Cotton sowing has ended in Tajikistan. It occupies over 300,000 hectares. (2304 GMT)

29 April

Moldavian machine operators complete beet sowing, continue with corn. (0204 GMT)

Grain crops are being sown on the fourth million hectare in Saratov Oblast. (0400 GMT)

First units go into fields of Omsk Oblast for spring field work. (0400 GMT)

30 April-2 May

LD030604 [Editorial Report] The following is a compilation of reports on agricultural developments in the USSR carried by Moscow Domestic Service in Russian on 30 April to 2 May. Times of broadcasts are given in parentheses at the end of each item.

30 April

Tajik cotton farmers have begun thinning out the crop. Despite unusual weather conditions this spring, shoots are growing well everywhere. This cotton covers more than 300,000 hectares in the republic. (0800 GMT)

2 May

Mass moisture retention is under way in Kurgan oblast. (0200 GMT)

Planting of citrus seedlings completed according to plan in Abkhaz ASSR. (0200 GMT)

Orenburg: 500,000 hectares sown with early crops. (0800 GMT)

Chuvash farmers are sowing grain crops and potatoes. (8000 GMT)

Gennadiy Dradinov hooks up with Sokolov in Kiev on Ukrainian spring field work progress. Sowing is going fine. Aleksey Guretskiy in Brest outlines good work in the fields there. Potato planting is nearly finished. Stanislav Podrezov in Smolensk says the weather there has been very dry and much moisture retention work has been done. (0800 GMT)

Omsk Oblast fieldworkers are preparing 4 million hectares for sowing. (1100 GMT)

3-5 May

LD060152 [Editorial Report] The following is a compilation of reports on agricultural developments in the USSR carried by Moscow Domestic Service in Russian on 3-5 May. Times of broadcasts are given in parentheses at the end of each item.

3 May

Kazakh virgin landers ending preparations for spring wheat sowing, Mordovians ending spring sowing. (0800 GMT)

Belogorod Oblast started mass sowing of corn. This crop is to occupy more than 250,000 hectares. The area of corn for grain has been increased. (1030 GMT)

In Altay Kray grain growers have now completed moisture retention on 3 million hectares, which is half of the total area. In Kolunda and Rubtsovsk steppes harrowing is being completed; these are the areas where strong, hard and rich varieties of wheat are to be concentrated. As the weather warms up field work is rapidly spreading to eastern and northern parts of the kray. (1100 GMT)

Spring crops have been sown in the USSR on almost 48 million hectares. Gennadiy Klimov reports from Orenburg that grain crops are to be sown there on around 4 million hectares. The soil is dry especially in the east of the republic and therefore moisture retention work is of prime importance. Apollon

Petrov in Stavropol describes the fine field work being done. Special attention is being paid to ensuring that the harvest is of high quality. Correspondent Rakhimov contributes news of fodder in Uzbekistan. Fodder farming too must be of high quality. The republic is to procure very nearly 7 million tons of fodder this year. The farmers there are also filled with determination to produce a good vegetable harvest (1100 GMT).

Sowing has been completed on beet plantations in Stavropol Kray, where workers have pledged to deliver at least 1 million tons of beet to sugar refineries. (1300 GMT)

4 May

Mass spring sowing has started in Kazakhstan. Rice sowing began today. Kazakhstan is the country's northernmost rice-growing area. About 140,000 hectares of fallow is to be sown to rice. This is 5,000 hectares more than last year. (0004 GMT)

In Saratov Oblast sugar beet has been sown on 20,000 hectares. The oblast pledge is to sell over 200,000 tons of sugar beet to the state. (0400 GMT)

5 May

Sowing campaign has started in Buryatia. (0300 GMT)

Planting of shelter belts, which will protect cotton fields from burning winds, has been completed in the east of Turkmenistan. Preference has been given to the most drought-resistant trees: mulberry trees, ashes and maples. The creation of a green barrier between the desert and the oasis will also make it possible to enrich the pastures. (1000 GMT)

Tatar farmers have sown 1 million hectares of early spring crops so far, despite the unusually dry spring and frosty spells. (0400 GMT)

Sowing of sugar beet has ended in Voronezh Oblast on more than 200,000 hectares. (0600 GMT)

Sowing of early grain crops has ended in Mordovia. (0600 GMT)

Sowing was completed in Belorussia today. Grain corps have been sown on an area exceeding 1,500,000 hectares. (0800 GMT)

Kazakhstan farmers today started sowing of grain crops on the third million hectares. Everywhere special attention is being devoted to the quality of work. Wheat and barley are being sown in fallows on every fourth hectare. Almost half of the sowing is being carried out with simultaneous application of mineral fertilizers in the rows. The recommendations of the zonal cropping systems for the times when to sow the seeds are being strictly carried out. (1100 GMT)

Collective and state farms of the eastern and foothill zones of the Altay have started sowing peas. This early crop takes up large areas here: Over 150,000 hectares. (1100 GMT)

6-9 May

LD100009 [Editorial Report] The following is a compilation of reports on agricultural developments in the USSR carried by Moscow Domestic Service in Russian on 6-9 May. Times of broadcasts are given in parentheses at the end of each item.

6 May

Planting of sugar beet has been completed on an area of over 202,000 hectares in Voronezh. (0100 GMT)

The arid Suzak steppe and western Muyun-kum are turning into an area of irrigated farming. The construction of an earth dam has been completed at the foot of the northern slopes of the Karatau mountain range. Water from mountain rivers, which dry out in summer, is chanelled into the water reservoir which is designed to impound 1,500,000 cu.m. of water. Small-scale irrigation provides water on a regular basis for 10,000 hectares of plantations in the south of Kazakhstan. (0100 GMT)

In Tuva Oblast spring sowing has started. Grain crops to be sown on over 300,000 hectares. Kurgan Oblast has begun sowing spring wheat. Penultimate soil-preparation has begun in Omsk Oblast. (0800 GMT)

Harrowing of autumn plough-lands and fallows is coming to an end in Altay. Sugar beet sowing has not begun there. It will occupy an area of 60,000 hectares. Altay is the sole place in Siberia where sugar beet is grown. (1100 GMT)

In Penza Oblast sowing of main crops completed. (2005 GMT)

Presowing tilling underway in Omsk Oblast. (2005 GMT)

8 May

Sowing in Orenburg Oblast in full swing. (0204 GMT)

Mass sowing has started in Tyumen, as warm spring weather comes here 2 weeks later than usual. Altogether about 1.5 million hectares are to be sown here with various crops. (0600 GMT)

Soybean sowing has started in the Crimea. (0600 GMT)

Issyk-Kul Oblast has started potato sowing, on 5,000 hectares of highland field, which is the biggest potato field in the republic. (0600 GMT)

Orenburg Oblast spring sowing started on third million hectares. (0800 GMT)

Over 1,000,000 hectares harrowed in Omsk Oblast. (0800 GMT)

Corn has been sown on over half the total area in Belgorod. (0800 GMT)

9 May

As the soil warms up in the lower Volga region, sowing of late crops is beginning. Saratov Oblast has pledged to sell the state 425,000 tonnes grain. (1100 GMT)

Moshkin, chief agronomist of Altay Kray Agricultural Directorate, talks about beginning of sowing in the kray, stressing importance of good moisture retention work and of progressive forms of labor organization, and mentioning that the kray is to sell the state not far off 3,700,000 tonnes grain of which 1,500,000 tonnes is to be strong, rich and hard varieties of wheat. (1100 GMT)

Sowing has begun in the most northerly areas of the Non-Chernozem Zone. Sowing of grain crops has been completed in Chuvashiya. Root crops for fodder and annual grasses have also been planted. More than 200,000 hectares have been sown to date with early grain crops in Udmurtiya. Planting of potatoes has begun on the plains of the Mai Non-Chernozem Zone. Sowing of long-fibre flax was completed today in Smolensk Oblast. (1530 GMT)

Sowing of spring crops has been completed in the whole of Dnepropetrovsk Oblast. (1750 GMT)

10-14 May

LD142240 [Editorial Report] The following is a compilation of reports on agricultural developments in the USSR carried by Moscow Domestic Service in Russian on 10-14 May. Times of broadcasts are given in parentheses at the end of each item.

10 May

First 5,000 hectares have been sown in Archangelsk Oblast. Grain crops will cover over 100,000 hectares here. (0700 GMT)

Sowing is in progress on the second half of the total grain area in the Orenburg Oblast. (2004 GMT)

Sowing of grain crops has begun in Pavladar Oblast in Kazakhstan. The work was delayed by this year's late spring. Grain crops, mainly strong and hard varieties of wheat, will take up an area of almost 2 million hectares. (2310 GMT)

11 May

To day, 1.6 million hectares have been sown with spring crops in Kuybyshev Oblast. (0204 GMT)

Sowing of pulse crops has been completed in Tatariya on 250,000 hectares. (0600 GMT)

Farms of Chelyabinsk Oblast have commenced a mass sowing of grain crops. The field work is taking place in complicated conditions, with a great shortage of moisture in the soil (1000 GMT)

Southern Uzbekistan has started cutting winter barley, the first area of the country to do so. Winter grain in the republic covers almost 700,000 hectares. Repeat sowing of corn for grain is to be carried out where cereals have been repeated. (1530 GMT)

Machine operators of Kharkov Oblast have completed sowing corn for grain. (1904 GMT)

12 May

Farms of Uralsk Oblast have sown 1.4 million hectares to wheat, barley and oats--140,000 hectares more than planned. (1530 GMT)

In Bashkiria 2 million hectares have been sown to early crops--nearly two-thirds of total. (2230 GMT)

13 May

The farms from the virgin land eastern areas of Orenburg Oblast have started sowing grain crops. The large state farms which were set up here 30 years ago are to sow over 1,000,000 hectares. The virgin land grain growers are producing wheat of strong varieties. (2004 GMT)

14 May

Mass sowing of spring wheat begun in Kurgan Oblast. (0800 GMT)

Udmurtiya sowing campaign on last stages today. (0800 GMT)

Farms of Gorkiy Oblast are nearing completion of sowing of early grain crops. This spring collective and state farms will plant potatoes on an area of more than 90,000 hectares. (1100 GMT)

The sowing of spring wheat started in the Kurgan Oblast today. More than 1 million hectares will be sown. (1500 GMT)

Work is in progress on corn fields in the Stavropol Oblast. Total area under corn is 415,000 hectares and one in 5 hectares is allocated to corn for grain. (1500 GMT)

15-16 May

LD170529 [Editorial Report] The following is a compilation of reports on agricultural developments in the USSR carried by Moscow Domestic Service in Russian on 15-16 May 1984. Times of boradcasts are given in parentheses at the end of each item.

15 May

Mass cereal sowing started in the Kazakhstan virgin lands today. Over half the brigades, twice as much as last year, are working to collective contract.

Farmers aim to get over 28 million tons of grain. Cereals and pulses have been sown on 5 million hectares, nearly a quarter of the area. (1300 GMT)

Farmers in Kuybyshev Oblast completed sowing of early grain crops over the allotted area of 1,426,000 hectares. (1530 GMT)

Around 7 million hectares have been sown by Kazakh machine operators. That is a quarter of the area set aside for spring crops. Wheat sowing is ending in Aktyubinsk and Uralsk Oblast. The sowing effort is at its height in East Kazakhstan and Semipalatinsk Oblasts. (1904 GMT)

Orenburg farmers are carrying out sowing of grain crops on the fourth and last million hectares. (2005 GMT)

Farmers of Msk Oblast have begun sowing of wheat. This year it is to be sown on almost 1.5 million hectares, which is two-thirds of the whole grain crop area. (2005 GMT)

16 May

Corn planting is ending in Kharkov Oblast. The crop occupies 360,000 hectares. (0600 GMT)

The farms of the Bryansk Oblast today completed corn planting. More than 92,000 hectares have been placed under this main fodder crop. The corn growers intend to obtain an average of 250 quintals of green mass and cobs per hectare and to put down about 2.5 million metric tons of silage. (1100 GMT)

Perm Oblast has completed sowing on almost half of the areas allocated to early grain crops. Spring is late in the oblast. Five hundred thousand hectares are allocated for grain and fodder crops. (1530 GMT)

Planting of potatoes is being completed in Mordovia. Sowing of corn, groats and vegetables is being conducted at an accelerated pace. Altogether 90 percent of the areas allocated have already been sown in grain crops. At the same time cropping farmers have started tending sugar beet and other crops. In connection with the hot dry weather watering of perennial grasses, natural and sown meadows and vegetables has started earlier than usual. (1530 GMT)

Sugarbeet sowing was completed today in Kuybyshev Oblast.

Grain growers of Altay have completed sowing of spring crops on first 1 million hectares, which is 20 percent of the whole spring field area. (1904 GMT)

Over 250,000 hectares have been sown with grain crops in Tselinograd Oblast. Despite the changeable weather, which is delaying the pace of the sowing campaign, most farms are working according to plan. (2230 GMT)

17-18 May

LD190237 [Editorial Report] The following is a compilation of reports on agricultural developments in the USSR carried by Moscow Domestic Service in Russian on 17-18 May 1984. Times of broadcasts are given in parentheses at the end of each item.

17 May

Virgin landers of Kazakhstan and Siberia have started sowing work. By mid-May spring crops had been sown on an area greater than 83 million ha. Of late the sowing effort has been held up somewhat as a result of poor weather and rain in many areas. There is now dry and sunny weather over most of the country and farmers are making up for lost time. (1000 GMT)

Barnaul: Mass sowing of spring wheat has begun in the Altay. This spring it will occupy about 3 million ha out of 5 million ha of the spring crop area. (1100 GMT)

Sowing of buckwheat and millet is underway in the Ukraine and many regions of the Russian Federation. Twelve union republics have begun cutting of hay. (1100 GMT)

Report on harvesting in Tajikistan from Dushanbe: Machine operators have just completed harvesting of perko and rape. These feed crops are called interim crops in Tajikistan. Both crops are normally sown in autumn after harvesting of grain crops. This spring state and collective farms have already obtained almost 1 million of perko and rape. Now about our main crop: Cotton. On account of the cold and rainy spring machine operators have had to resow large areas. Harvesting of grain crops has not begun for the time being in Tajikistan. Frequent rains are impeding work. (1100 GMT)

Sowing of grain crops began in Novosibirsk Oblast today. The crops will take up an area of over 2 million ha. Recent rainfalls have increased the moisture level of the soil but at the same time have reduced the pace of field work. (1530 GMT)

Sowing of early spring and pulse crops has been completed in the Mari Non-Chernozem Zone. (1530 GMT)

Sugar beet sowing has begun in Altay. (2004 GMT)

Sowing of millet has begun in Pavladar Oblast. Over 300,000 ha have been allocated for groats in the oblast. (2004 GMT)

18 May

Omsk Oblast: Spring crops have been sown on the first 100,000 ha. (0001 GMT)

Prikamye's spring field covers over 1 million ha. Spring sowing has been carried out here already on half of the areas. (0200 GMT)

More than 250,000 ha have been sown with grain crops in Tselinograd Oblast. (0204 GMT)

Don region farmers have sown spring crops on 2.5 million ha. Sowing of these crops is now ending. (0400 GMT)

Maize showing is ending in the Ukraine, more than 5 million ha have been sown. (0400 GMT)

Spring field work has entered its final stage. Sowing of grain crops is now taking place mainly in the eastern USSR. Many areas in the European USSR are reporting that sowing has been completed. Sowing has been carried out on 2.5 million ha in the Don area. Up to 80,000 ha are being sown there every day. Sowing of spring crops is nearing completion there. (0430 GMT)

Ukraine sugar-beet seeds sprouting. This season they have been sown to almost 1.7 million ha. (0800 GMT)

Lithuania: Rapid planting of potatoes carried out on 50,000 ha. (0800 GMT) (Note figure is given as 60,000 ha at 1500 GMT)

Mari ASSR farmers sowing progress proceeding well. Nearly 200,000 ha sown. (0800 GMT)

Water flowed along the Aktogay Canal, Semipalatinsk Oblast, today from the Ohar Reservoir, to irrigate 11,000 ha of land. Work on the Besgaragay irrigation area, extending to 80,000 ha, is proceeding apace. By the end of the present 5-year period, another 15,000 ha of irrigated land is to be brought into use in the oblast. By the 1990s, the area of improved and irrigated land in the USSR will be increased to 41-44 million ha from the present 33 million ha. (1630 GMT)

Farmers of Kustanay Oblast have started mass sowing of cereals. Over 4 million ha of land has been allocated to barley and wheat. The Kustanay farmers plan to sow 400,000 ha per day during the busiest part of the sowing season, and they are now approaching this target. (1750 GMT)

The first dozens of tons of early vegetables have been flown to Chukotka; the Magadan aviators plan to deliver over 2,500 tons this season. (1750 GMT)

18-20 May

LD210114 [Editorial Report] The following is a compilation of reports on agricultural developments in the USSR carried by Moscow Domestic Service in Russian on 18-20 May 1984. Times of broadcasts are given in parentheses at the end of each item.

18 May

Sowing of peas is being completed in Altay Kray: They cover 150,000 ha. Sowing of what has started in Kulunda, hot on the heels of eastern and foot-hill areas.

Eleven-thousand ha of arid land in the Zharma valley in Semipalatinsk Oblast have been turned into a zone of guaranteed harvests. The 22-km (?Aktogan) Canal, along which water from the Charskoye Revervoir has started irrigating feed crops and cereals, will double or triple yields.

19 May

Bread grain growers of Altay are carrying out sowing of spring crops on second million hectares. (0600 GMT)

Sowing of maize has been completed on Stavropolye today. (0600 GMT)

Potato sowing is ending in Ryazan Oblast. Seeds of this crop have been sown on over 90,000 hectares. This year farmers intend to dispatch 690,000 tonnes of potatoes to state granaries, industrial centers and resort areas. (0600 GMT)

The center of the spring field work has now shifted to the country's eastern regions. Omsk Oblast land cultivators are engaged in mass sowing of wheat. The weather does nothing to facilitate their work, but the rate of work corresponds to the plans. First hundreds of thousands of hectares have been sown to wheat here to date. (0800 GMT)

Specialized farms of Brest Oblast are carrying out sowing of buckwheat on 6,000 ha. (1100 GMT)

On vegetable farms of Lithuania plantations and arable meadows watering has begun. (1100 GMT)

Planting of potatoes is being carried out on the last hectares by Kaluga Oblast farmers. (1100 GMT)

Kustanaya Oblast in Kazakhstan has begun sowing grain crops. More than 4 million ha have been earmarked here for barley and wheat. Cereals have been sown on 500,000 ha to date. (1400 GMT)

Yuriy Alekseyevich Nikitin, deputy chief of the main grain crops board of the USSR Ministry of Agriculture, is interviewed on the progress of the sowing campaign, which has moved to the west of the USSR. Particular attention is being paid to moisture retention and weed eradicatation. Nikitin cites USSR CSD figures for work completed up to 14 May. Over the last week, spring crops have been sown over almost 17.5 million ha and grain and leguminous crops over 8.6 million ha. Nikitin summaries the state of play in the sowing campaign in other areas up to date: Rice and vegetable sowing is going well. Early vegetable crops are already being harvested, with 4 percent more being delivered to the state than at the same time last year. Some oblasts have already started gathering in feed crops. (2040 GMT)

20 May

Tselinograd Oblast: Wheat is being sown on 100-120,000 ha every day. Unstable weather has so far been holding up the rate of the sowing campaign, but every

hour of good weather is being put to good use. Spring crops have already been sown on one-fifth of the oblast's bread-grain acreage. (0800 GMT)

Orel Oblast: Sugar beets are being tended. The crop occupies 64,000 ha. (0800 GMT)

Mass sowing has started on the fields near the Tayga [Podtayezhnyy Polya] in Tomask Oblast, the northernmost zone of agriculture in Siberia. (1950 GMT)

Despite the fact that today is a day off the farms of the Altay are watering perennial grasses throughout daylight hours. Watering crop rotations [Polivnyye Sevooboroty] have been created here, in which the most valuable and high-yield grasses are grown. Altogether 100,000 ha of grasses, pulses and vegetables will be irrigated in the Altay this year. (2204 GMT)

21-22 May

LD230518 [Editorial Report] The following is a compilation of reports on agricultural developments in the USSR carried by Moscow Domestic Service in Russian on 21-22 May 1984. Times of broadcasts are given in parentheses at the end of each item.

21 May

Tuva wheat sowing ended on 100,000 ha. (0001 GMT)

Cereal sowing began in Tomsk Oblast. (0104 GMT)

Ryazan Oblast completed potato planting. (0400 GMT)

Sowing of potatoes has ended in Bryansk Oblast, over an area of 116,000 ha. (1100 GMT)

All the farms in Altay have started sowing the basic grain crop, spring wheat. The operators of the Kulunda Steppe region took sowing equipment into the fields today. This spring the weather has been unfavorable there. There is a severe shortage of moisture. In view of this, the operators are not allowing any time lapse between preparing the soil and sowing. (1500 GMT)

Mass sowing under way in virgin land and Siberian wheat regions. In Kustanay Oblast the sowing of grain crops is under way on the second million ha. They took just 3 days here to sow the first million. (1830 GMT)

The construction of the first complex of the Turkmenian works of nitrogen fertilizers under construction near the town of Mary is in its final stage. By the end of June the complex, the annual output of which will be 765,000 t, will be commissioned. The natural gas from deposits in the south of the republic will be used in the production. When commissioned, the enterprise will be able to satisfy the needs of agriculture of Turkmenia for nitrogen fertilizers and also supply them to the neighboring republics in Central Asia. (0600 GMT)

22 May

Perm Oblast spring sowing started on the final quarter of acreage. (0202 GMT)

Uzbek farms have started handing over silk cocoons to the state. (0204 GMT)

In Kurgan Oblast the sowing of grain crops is conducted on one-third of all land to be sown; due to cold and long drawn-out spring, the sowing started later than usual and is still behind the schedule. To accelerate the process, the sowing machinery is working 24 hours. (0600 GMT)

Sowing of Alfalfa has started in Chechen-Ingush ASSR. (0600 GMT)

In Georgia the harvesting of tea-leaf has started. (0600 GMT)

23-24 May

LD250248 [Editorial Report] The following is a compilation of reports on agricultural developments in the USSR carried by Moscow Domestic Service in Russian on 23-24 May 1984. Times of broadcasts are given in parentheses at the end of each item.

23 May

Gorkiy Oblast farms completing sowing on more than 1 million hectares. (0600 GMT)

Kurgan Oblast grain crops sowing on half a million hectares has been completed. (0600 GMT)

Omsk Oblast farms ended sowing on the third of the area. (0600 GMT)

In Altay Kray spring wheat has been sown on 1 million hectares, which is one-third of the bread-grain area. Moisture-saving techniques are being employed, with no break between soil preparation and sowing. On larger areas mineral fertilizer is applied in the same operation as the sowing. Four-fifths of the area is being sown with new regionally-tested varieties of strong, hard and rich wheats. (1100 GMT)

Bread-grain harvesting machinery is being readied in Ukraine: Almost 82,000 combines, a lot more than last year, and over 13,000 complex detachments are to do the work. (1100 GMT)

Taaganrog Combine Works has gone over to manufacturing updated units for "niva" combines. (1100 GMT)

This year potatoes are being cultivated without expending manual labour by the mechanizers of the foothills region of Stavropol Kray. Potatoes have been planted to over 3,000 ha and over the entire area planting was carried out by the progressive strip-ridge method (lentechno-grebnevoy sposob]. This new technology has made possible to carry out a cultivation on the plantations prior to the appearance of shoots. The area's potato-growers are planning to life no less than 200 quintals of potatoes per ha this year. (1530 GMT)

Tselinograd Oblast: 1.5 million ha have been sown to grain crops--half the acreage. Sowing of spring crops is under way in the Trans-Urals, Siberia and a number of oblasts in Kazakhstan. Southern areas have started harvesting wheat and barley and mowing grasses. (1904 GMT)

24 May

Spring crops have been sown on first million ha in Omsk Oblast. (0600 GMT)

Two million ha--65 percent of the total area--have been sown with wheat in Kustanay Oblast. (1530 GMT)

Mass cutting of grasses has started in Kirghiziya. Lucerne is the main crop; about 200 quintals are being obtained per ha. (1530 GMT)

Sugar-beet sowing has ended in Altay. Area: 60,000 ha. (1530 GMT)

Penza Oblast today finishing sowing corn. Area: 250,000 ha. More space is being given to early and medium-early varieties than previously. (1530 GMT)

CSO: 1824/476

MAJOR CROP PROGRESS AND WEATHER REPORTING

## BRIEFS

SPRING SOWING PROGRESS--The RSFSR Central Statistical Administration today published data on progress in spring sowing in the republic. (?Aleksandr Petrovich Asarchuk), head of the Main Cultivation Department of the RSFSR Ministry of Agriculture, said: Around 47 million hectares are sown with various spring crops, which is more than half the area for spring crops. Farmers are completing sowing of pulse crops. In Altay and Bashkiriya, sowing of sunflower and sugar beet is underway on the last fields. Mass work is underway in farms cultivating grain. At the beginning of this week, around half the area allocated was sown with potatoes. [Text] [LD152202 Moscow Domestic Service in Russian 1530 GMT 15 May 84]

CSO: 1824/476

# AGRICULTURE MINISTRY OFFICIAL ON TRACTOR MODELS

Moscow EKONOMICHESKAYA GAZETA in Russian No 11, Mar 84 p 16

/Reply by R. Men'shikov, deputy director, Main Administration Ministry of Agriculture USSR, to the article "KPD Tractor Park" (No 52, 1983)/

/Text/ The main administration of agricultural mechanization and electrification of the USSR Ministry of Agriculture has examined the article in which questions regarding the increase of effectiveness of machine and tractor parks in kolkhozes and sovkhozes were raised. From 1980-1983, government tests were conducted at machine testing stations on the universal tractor-cultivators MTZ-142 and LTZ-145, about which there was particular discussion in the article. The tests indicated that in terms of operational and technological indices, these tractors are practicall identical, although the construction of the MTZ-142 tractor is somewhat better.

In connection with the fact that in the process of testing it was found that serious work needed to be done on the construction of the transmission and the direction system of the LTZ-145 tractor, the government testing commission for these tractors recommended that the basic tractor model be the type MTZ-142. It was also stipulated that in connection with the operational "machine system...," and taking into account the positive nature of the experience accumulated on the development of the LTZ-145 tractor, a unified tractor modification will be established on the "integral" model with four identical wheels. There are still no scientifically based combined units for these tractors. The all-union institute of mechanization has been given instructions to issue agrotechnical requirements for such combined units by the end of the first quarter of the current year.

12249
CSO: 1824/372

UDC 631.173

# STRENGTHENING AGROINDUSTRIAL PRODUCTION, TECHNICAL SERVICE

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 3, Mar 84 pp 37-47

[Article by L. Khitrun, chairman of the USSR State Committee for the Supply of Production Equipment for Agriculture: "Improve Production and Technical Service in the Agroindustrual Complex"]

[Text] As it accomplishes our large-scale social and economic tasks, the Communist Party is persistently and purposively implementing an agrarian policy which focuses on the planned and dynamic development of agriculture and of the nation's entire agroindustrial complex, increasing production and improving the quality of agricultural products, and increasing the economic effectiveness of all branches of the APK [agroindustrial complex]. A decree passed at the December 1983 Plenum of the CPSU Central Committee especially stresses the need for workers in the agroindustrial complex to constantly step up their efforts to fulfill the Food Program of the USSR, to increase the yield from the fields and productivity in animal husbandry.

Enterprises and organizations of the State Committee of the USSR for the Supply of Production Equipment for Agriculture are assigned an important role in this extensive and multifaceted work.

As they implement decisions coming out of the 26th party congress and subsequent plenums of the CPSU Central Committee, the labor collectives of enterprises and organizations of the USSR Goskomsel'khoztekhnika [State Committee for the Supply of Production Equipment for Agriculture] are focusing their efforts on creating the conditions necessary for the kolkhozes and sovkhozes to further increase labor productivity, achieve the efficient use of the machine and tractor pool, increase the productivity of fields and farms, and achieve good end results in agricultural production. All of the work performed by workers within the USSR Goskomsel'khoztekhnika is oriented toward the accomplishment of these tasks.

The accelerated development of the economy, the technical reequipment of agriculture and the need for further division of public labor and intensification of production specialization, stemming from this, are necessitating the steady and planned strengthening of Goskomsel'khoztekhnika as one of the leading elements of the agroindustrial complex, one which exerts a considerable influence with respect to enhancing the effectiveness of crop cultivation and animal husbandry.

The importance of engineer support for agriculture is growing by the year as a result of the systematic and all-round industrialization of agriculture. This situation demands that collectives of the system's enterprises and organizations work more vigorously to accelerate technical progress in agriculture, to extensively employ effective ways of using the machine and tractor pool and improve its technical servicing, and to improve the organization of material and technical supply, installation, start-up and adjustment, transport and other types of work.

Enhancing the effectiveness of kolkhoz and sovkhoz production and other branches of the APK by strengthening their materials and equipment base, achieving all-round mechanization and electrification, and adopting the achievements of science and technology is the most important part of the comprehensive program for the further development of agriculture. Agriculture's production capability has improved considerably as a result of the successful implementation of the party's course of technical reequipment for agriculture. Compared with 1965, for example, deliveries of equipment have now increased more than 2.5-fold for crop cultivation and 6-fold for livestock farming, the power level has grown 3-fold, reaching almost 700 million hp, and the power-worker ratio approaches 30 hp per worker.

In accordance with the Food Program agriculture will receive 3,740,000-3,780,000 tractors, 1,170,000 grain combines and 67-70 billion rubles worth of other agricultural machinery during the 11th and 12th five-year periods. The priority task is one of basically completing the total mechanization of crop cultivation and livestock farming and reequipping the food industry branches on a new technological basis by 1990.

The main directions for technological progress in agriculture are reflected in the system of machinery for the period 1981-1900. It involves increasing the range of technical equipment by almost 700 items during the 11th five-year period and includes more than 3,600 various machines and devices in all. Slightly more than 2,000 kinds were being produced at the beginning of 1983, and 1,600 types of new machines are to be developed by 1990. This is twice as many as were developed during the preceding five-year period. We will produce new and modernized, power-operated tractors, highly productive grain combines and other self-propelled machinery for various purposes, precision-seeding planters, solid-design (besstsepochnyy), wide-coverage, combination units, a new generation of equipment for combatting erosion, and a group of machines necessary for employing industrial technologies in the cultivation of corn, sugar beets, potatoes and other vegetables and crops.

The conversion of livestock farming and feed production to an industrial basis is being stepped up. A total of 70 production processes presently performed by hand in this branch will be mechanized. A total of 130 different sets of equipment, flow lines and technical equipment for new technological methods have been added to the system of machinery for livestock farming. We will be mastering the production of machines and devices comprising unified technological complexes for feed procurement, preparation and distribution, and for mechanizing production processes on the farms and in the complexes.

I need to point out the fact that modern agriculture demands not simply a build-up of technical equipment, but the development of a system of machinery which

will provide for the flow-line, comprehensive performance of all agricultural operations at the times most consistent with good agricultural practices, and for totally eliminating manual labor in crop cultivation and livestock farming. Machines for the performance of individual operations are therefore being replaced and will be replaced in even greater quantities with comprehenisve production-flow-systems providing for complete mechanization and making it possible to fundamentally alter the technology used in agricultural production.

The development of the system of machinery planned for the period 1981-1990 will make it possible to increase labor productivity 1.5-fold for crop cultivation and more than 2-fold for livestock farming. This will permit us to free at least 1 million servicing personnel on the farms and in the complexes at the present level of labor productivity. More than 4 billion man-hours will be saved annually in agriculture as a whole, which is the equivalent of totally freeing almost 3 million workers.

The USSR Goskomsel'khoztekhnika is implementing a system of organizational and technical measures to accelerate technological progress in agriculture, to develop the mechanization and electrification of agricultural production, to publicize and introduce new equipment and industrial-type technologies. The most important directions in this work are the following: participation in the development of agricultural, zoological and veterinary requirements for new machinery and the drawing up of scientifically substantiated orders for agricultural machinery and equipment; monitoring the filling of these orders; setting up state, preliminary and final testing of the equipment; acceptance of the products at the manufacturing plants, consideration of consumer complaints about the equipment quality and the implementation of steps to eliminate defects; the servicing of the machinery during the warranty period; the training of kolkhoz and sovkhoz machine operators, engineering and technical personnel in methods for making highly efficient use of the new equipment and in the procedures involved in the advanced technology.

The machine testing stations of the USSR Goskomsel'khoztekhnika are assigned a special place in the accomplishment of these tasks. The system presently has 31 MIS [machine testing stations] and two scientific research institutes for testing tractors, agricultural machinery and equipment for the livestock farms. They perform state testing of all new equipment, including imported equipment. They are constantly inspecting the series-produced machinery. This makes it possible to objectively assess the quality and technological level on an interdepartmental basis. The following figures illustrate the scope of this work. More than 500 new equipment items, 880 series-produced items and 180 foreign machines were tested in 1983.

Goskomsel'khoztekhnika relies on information from the machine testing stations and state test data as the basis for determining demand, making up orders for new equipment and publicizing technological progress. This is a barrier protecting agriculture from possibly receiving inferior machinery. In addition, Goskomsel'khoztekhnika perfects the equipment itself, as well as the technology for cultivating farm crops in accordance with their specific zonal characteristics. The machine testing stations are assigned the task of increasing testing volumes, considerably reducing the amount of time involved and permitting only the most highly productive, reliable and conveniently operated machinery to be placed into production.

Proposals from agriculture and industry for improving the means of mechanization are concentrated at the machine testing stations. This makes it possible to give maximum consideration to both the interests of the machine operators and the capabilities of the plants. Thorough discussion of the various specifications and of problems makes it possible to adopt the optimal designs on the basis of objective data from state tests.

There are deficiencies in the way the production of equipment for agriculture is organized, of course. Far from all of the means of mechanization delivered to agriculture conform to the technical specifications for dependability and durability. The productivity of the machine and tractor pool is lowered as a result, the schedules for the field operations are not met, the quality of the work deteriorates and outlays for the repair and technical maintenance of the means of mechanization increase.

Extensive measures to improve the dependability and productivity of agricultural equipment and to achieve the further technical reequipment of the branches of the APK are specified in the decree passed by the CPSU Central Committee and the USSR Council of Ministers: "On Steps to Further Improve the Technological Level and the Quality of Machinery and Equipment for Agriculture, to Improve Their Utilization and Increase their Production and Delivery During the Period 1983-1990." By way of implementing the decisions, the USSR Goskomsel'khoztekhnika, together with the USSR Ministry of Agriculture, the USSR Ministry of Land Reclamation and Water Resources, the USSR Ministry of the Fruit and Vegetable Industry, the Ministry of Tractor and Agricultural Machine Building, the Ministry of Machine Building for Animal Husbandry and Fodder Production, the Ministry of the Automotive Industry and other ministries and departments are focusing their efforts on improving the performance of all services involved in producing and supplying technical equipment, monitoring it for dependability and durability, and introducing new equipment and industrial technologies.

A great deal of attention is being given to the work of the agricultural agents--Goskomsel'khoztekhnika's acceptance agents at the manufacturing plants. It has been decided that the USSR Goskomsel'khoztekhnika will have permanent representatives at all enterprises of the Ministry of Tractor and Agricultural Machine Building, the Ministry of Machine Building for Animal Husbandry and Fodder Production, the Ministry of the Automotive Industry and a number of other departments producing technical equipment for agriculture. They are all granted authority to halt the acceptance and forbid the unloading of equipment and spare parts not meeting state standard specifications. In addition, all expenses involved in repairing equipment which breaks down due to inferior quality during the warranty period is now paid by the manufacturing plants, which are also fined. It is planned to assess the technological level of the machinery delivered to agriculture each year and to establish time limits for removing them from production. In case of the continued production of obsolete equipment there will be a significant discount from industry's wholesale prices and from the transfer price for agriculture.

Scientific and technological progress is making it possible to create conditions conducive to highly productive work in the fields and on the farms and to the furhter increasing of agricultural output. In order to realize these possibilities, however, we must achieve effective use of the machine and tractor pool and

the farm equipment, their skillful operation, a high level of technical preparedness and good preservation, prompt and quality servicing and repair, the efficient organization of mechanized, transport and other operations.

Enterprises and organizations of the USSR Goskomsel'khoztekhnika, which are charged with providing engineering and technical services for agriculture, are taking an active part, together with the kolkhozes and sovkhozes, in the performance of these tasks. The system's fixed capital presently exceeds 15 billion rubles, and it has 7,300 enterprises and organizations in operation. These include more than 3,500 rayon associations and branches, almost 400 repair plants, more than 1,600 construction and installation organizations, around 500 independent transport operations, and 370 organizations for technical equipment supply and acquisitions. More than 1.7 million people work in the Goskomsel'khoztekhnika. Its total production volume exceeds 11 billion rubles and its technical equipment supply operation, 23 billion rubles, annually.

Goskomsel'khoztekhnika's most important functions continue to be the repair and technical servicing of the machine and tractor pool and the farm and other equipment of the kolkhozes and sovkhozes, their provision with technical equipment, the mechanization of livestock facilities, freight hauling, the manufacture and installation of hothouses and the performance of highly diverse services for agriculture and other branches of the APK.

The organization of repair and technical servicing of the machine and tractor pool has a special place in the system's multifaceted work. The degree of agriculture's technical equipment has reached the point at which the prompt and quality restoration of machinery and equipment to operating condition is the crucial factor with respect to increasing the degree of mechanization of agricultural production. In other words, the more equipment there is, the greater the effort required to care for it. Despite a stable trend toward the reduction of specific costs involved in maintaining the equipment, outlays for the repair and technical servicing of the machine and tractor pool amount to almost 19 percent of its net value, or around 6 billion rubles a year. The creation of a modern, well-equipped repair and maintenance base for the APK is therefore of great importance with respect to obtaining good end results in agricultural production.

At the present time more than 70 percent of the tractors and more than half of the motor vehicles, 62 percent of the grain combines and 90 percent of the engines of kolkhozes and sovkhozes receive major overhauls at the system's enterprises. When we include minor, routine repairs, 750,000 tractors, around 160,000 grain combines, 1,150,000 tractor and combine and almost 1 million motor vehicle engines, and a large quantity of other machines and assemblies are restored for agriculture annually at Goskomsel'khoztekhnika shops. In addition, more than 270,000 motor vehicles receive major repairs and more than 500,000 receive technical servicing there.

The following directions have been worked out for further developing agriculture's repair and service base on the basis of modern requirements for organizing the repair of agricultural equipment, and most importantly, taking into account the advantages of division of labor. It is planned in the future to totally concentrate the major overhauling of machinery, assemblies and systems at specialized

enterprises of Goskomsel'khoztekhnika, and routine repair work and technical maintenance, on the kolkhozes and sovkhozes, in general-purpose shops and at technical service stations of the system's rayon associations. It is also planned in the future to limit routine repairs on the farms mainly to the replacement of unservicable assemblies and systems with new or repaired ones.

This is the essence of the total-repair system, which is being adopted more and more extensively. Equipment exchange stations are one of its components. They issue kolkhozes and sovkhozes repaired assemblies and systems in exchange for worn-out items for the cost of the repairs. This is very profitable for the farms. They save an average of up to 40 rubles per tractor by obtaining the assemblies and systems ready for use. Almost 60 percent of the assemblies and systems are now being given out on the day designated for issuing the repaired equipment. At many of the exchange stations complete repaired machines are offered along with repaired assemblies and systems in exchange for unservicable ones. This convenient type of service is constantly growing. The volume of operations performed by the equipment exchange stations exceeded 1.4 billion rubles in 1983, compared with .2 billion in 1972. Taking into account the desires of many RAPO [rayon agroindustrial associations], Goskomsel'khoztekhnika enterprises are planning to further expand the complete-unit repair system. It makes it possible to perform the same volume of work and turn out the same amount of products without increasing capital outlays, to reduce production costs and significantly improve the quality.

Goskomsel'khoztekhnika's specialized enterprises use high-precision, highly productive equipment, improved technology and modern diagnostic equipment. Skilled cadres work at these enterprises, and they adopt the achievements of scientific and technological progress more rapidly. More than 280 units of modern equipment and gear are used for the complete repair and technical maintenance of K-700 tractors. Not all of the kolkhozes and sovkhozes are in a position to acquire all of these lathes and devices. Furthermore, would it be practical to spread out such expensive and scarce equipment, which, in addition, would stand idle most of the time at a farm because of a lack of work.

According to data gathered by the Institute of Economics of the USSR Academy of Sciences the cost of a major overhaul for a motor vehicle is 163-180 rubles less at Goskomsel'khoztekhnika enterprises than on the kolkhozes and sovkhozes, and 48-57 rubles less for a grain combine. This is due to the more extensive specialization of the repair work in our system. It has been calculated that an increase of only 10 percent in the concentration of this work makes it possible on the average to increase the output-capital ratio at repair enterprises by 7.5 percent, to reduce production costs by 3 percent and to increase labor productivity by 7 percent.

Goskomsel'khoztekhnika takes the same line of specialization and optimal concentration in organizing technical maintenance for the machine and tractor pool. A study made in 125 rayons showed that when the technical maintenance of the machine and tractor pool was performed with the aid of rayon Selkhoztekhnika organizations, the daily output per standard tractor on the farms rose by 19 percent, specific outlays for technical maintenance and repair work were cut by 13 percent, the technical readiness factor for the tractors during peak periods of work grew by 5 percent, and diesel fuel consumption per hactare dropped by 16 percent.

Special importance is attached to the centralized technical maintenance of the power-operated K-700 and T-150 tractors. The assemblies and parts of these machines are of complex design, they are large and heavy, and the dismantling, assembly and adjustment operations involve a lot of work. Many of the farms are therefore practically incapable of servicing these complex machines with their own personnel and equipment. The system now has around 1,200 technical service stations and points. They handle more thn 200,000 power-operated tractors. Technical readiness for the centrally serviced tractors during the peak periods of work reaches 92 percent, output is increased by 10-15 percent, and outlays for maintaining them in operating condition are reduced. It is planned for around 260,000 power tractors, or 90 percent of the pool in agriculture, to be centrally serviced by the end of the current five-year period.

The following figures describe the effectiveness of centralized technical servicing (TO) and routine repair (TR) of K-700 tractors in Zernogradskiy Rayon, Rostov Oblast, Krasnokutskiy Rayon, Saratov Oblast, and Predgornyy Rayon in Stavropol Kray:

| | Serviced on farms | Centralized servicing |
|---|---|---|
| Readiness coefficient | 0.70-0.86 | 0.93-0.97 |
| Specific yearly outlays for TO and TR (rubles/hour of running time) | 1.52 | 1.27 |
| Average yearly operating time (hours) | 1014 | 1376 |
| Servicing time for TO-3 (hours) | 19.5 | 11.8 |
| Specific amount of labor required to correct problems (man-hour/hour of running time) | 0.133 | 0.06 |
| Average yearly duration of routine repairs for tractors (hours) | 308 | 168 |

The capacity of Goskomsel'khoztekhnika enterprises for repairing K-700 tractors have grown almost 2-fold since 1975, that of the technical service stations, 3-fold. The repair and servicing base for these machines is still not meeting agriculture's needs, however. Technical servicing covers only 25-30 percent of the K-700 tractors in Kuybyshev, Voronezh and Kursk oblasts, for example. There are no enterprises at all for the complete repair of these machines in certain oblasts of the Kazakh SSR. It is planned to put additional capacities for almost 6,000 repair jobs into operation at the specialized enterprises in the system by the end of the current five-year period, as well as technical service stations with a capacity of 63,000 K-700 tractors. This will make it possible to basically satisfy the needs of agriculture.

The technical servicing of motor vehicles is being developed along the same line. Experience with the specialized station has convincingly demonstrated their high level of effectiveness. A study has shown that they increase the technical readiness coefficient for motor vehicles by 10 percent, increase the average yearly mileage by 3,000-4,000 kilometers, and reduce the cost of technical maintenance and routine repairs by 100-110 rubles per vehicle. Total specific expenditures for

building a centralized technical service base is 800 rubles less per motor vehicle than with decentralized servicing. The need for machine tools is greatly reduced. The extensive adoption of specialized servicing for the motor vehicle pool is being held up by an inadequate production base, however. It is planned to accept 570,000 motor vehicles operating in agriculture for servicing by the end of the current five-year period by constructing additional stations and remodeling existing ones.

Improvement of the repair work holds large reserves for the highly effective use of the kolkhoz and sovkhoz machine and tractor pool. The Goskomsel'khoztekhnika system has considerably increased the output of tractors with increased operating life following major overhauls in recent years--from 70,000 to 330,000--and the number of tractor and combine engines--from 227,000 to 887,000 annually. In 1983 they accounted for 72 percent and 80 percent respectively of the total volume of major overhaul work. The comprehensive quality control system for repair work is being introduced more extensively. Today, the system is being used at almost 1,000 enterprises, and it will be introduced at yet another 500 plants and shops by the end of the 11th five-year period.

Branch certification of repaired equipment will be further developed. By the end of the five-year period certified repaired equipment will account for 80 percent of the total number of tractors and engines repaired. As a result of the steps which have been taken the post-repair warranty period for the work on engines, for example, has been increased by 1,000-1,500 hours of running time. There are still deficiencies, however, and consequently there are complaints about the quality of the equipment repairs from the farms. In order to improve the situation a special, comprehensive program has been developed for improving the quality of the repair work, which calls for the adoption of progressive technology and diagnostic equipment at the repair enterprises, for improving the control system and metrological support. A large part of the capital investments designated for developing the repair base is used for the technical reequipment of enterprises and for expanding operating capacities. Material liability for inferior work is being increased.

Purposive work is being performed to mechanize the labor-consuming processes in animal husbandry and to achieve a high level of dependability for the machines and equipment on the farms and in the complexes. During the first 3 years of the 11th five-year period the specialized services have totally mechanized facilities for handling 11.2 million cattle, more than 7 million hogs, and 88 million birds in poultry operations. Almost 10,000 new feed shops have been placed into operation. A large part of the complexes for fattening cattle and hogs and around 90 percent of the feed shops have been taken on for technical servicing. Technical servicing is being provided for 94-97 percent of the milking and refrigeration equipment on the farms. Together with other measures, this has made it possible for the nation's farms to increase sales of first-grade milk to 80 percent of the total.

The service for the installation, start-up and adjustment, technical servicing and repair of equipment on the livestock farms is undergoing dynamic development. The total volume of this work exceeded 2 billion rubles in 1983. This service includes more than 40 Sel'khozmontazhkomplekt associations and 64 installation

trusts, more than 1,100 PMK [mechanized mobile columns?] and start-up and adjustment administrations, 140 acquisitions offices, 325 procurement enterprises and haylage combines, 300 shops for repairing farm equipment, two scientific research institutes, three organizational trusts and more than 120 design organizations. During the period 1981-1985 it is planned for these services to perform 8 billion rubles worth of installation, start-up and adjustment, technical servicing and repair work, and to completely mechanize facilities for handling 21 million cattle, 12 million hogs, and 146 million birds in poultry operations.

Transportation services for agriculture constitute another important area of Goskomsel'khoztekhnika's production work. Centralized hauling, which now accounts for 82 percent of the total, is the main form of this work. In 1983 Goskomsel'khoztekhnika possessed approximately 16 percent of the total number of trucks in the nation's agriculture, but they performed 20 percent of the total number of hauls and accounted for 32 percent of the total freight traffic in agriculture. The system's motor transport hauled more than 825 million tons of cargo, 85 percent of which was for enterprises and organizations of the agroindustrial complex. More than 130,000 of the system's motor vehicles operate as part of motor columns in the harvest each year.

Experience has shown that the centralized transportation system with free delivery to the farms results in efficient use of the motor vehicle pool and labor resources, and improves all the indices. The adoption of this kind of transportation service makes it possible to free each year around 60,000 kolkhoz and sovkhoz drivers, loaders and dispatchers, which were previously engaged in delivering freight from the Sel'khoztekhnika supply bases. The conversion to the centralized shipment of all freight from supply bases, railway stations and warfs to the farms will be completed during the 11th five-year period. The figures for 1982, which are given below, can be used for assessing the good effectiveness of the motor transport system's operation as a result of employing centralized freight delivery.

| | Agriculture as a whole | Kolkhozes | Sovkhozes | Goskomsel'khoztekhnika |
|---|---|---|---|---|
| Hauling costs (man-hours) | | | | |
| 1,000 tons of freight | 613 | 673 | 612 | 552 |
| 1,000 ton-kilometers | 24.1 | 35.7 | 31.8 | 12.1 |
| Gasolene consumption (g/ton-kilometer) | 143 | 170 | 171 | 97 |
| Basic cost per 10 ton-kilometers, rubles) | 0.78 | 1.06 | 0.96 | 0.60 |
| Use factor: | | | | |
| load capacity | 1.01 | 0.80 | 0.90 | 1.17 |
| mileage | 0.50 | 0.48 | 0.78 | 0.59 |

The creation of the rayon agroindustrial associations produced conditions conducive to the further development of centralized freight delivery methods. Centralized control of motor transport shipments, regardless of the departmental ownership of the transport equipment, was already being universally employed in 1982. Operations administrations were set up under the rayon agricultural equipment associations during the harvest season, which coordinated the operation of the motor transport equipment and worked to assure more productive use of the harvesting, loading and unloading, and transport equipment.

Reliable material and technical supply has an important role with respect to enhancing the effectiveness of agricultural production. The USSR Goskomsel'khoztekhnika supplies equipment, materials and various goods to almost 48,000 kolkhozes and sovkhozes and to 20,000 other agricultural enterprises and organizations. It provides enterprises and organizations in all sectors of the national economy with spare parts. The list of the materials and equipment it provides exceeds 200,000 items. They are produced by 9,000 industrial enterprises. In addition, a special service of Goskomsel'khoztekhnika provides 1.8 billion rubles worth of equipment annually for more than 120,000 livestock complexes, poultry and other farms and facilities under construction or reconstruction.

The kolkhozes and sovkhozes need more than simply prompt delivery of the machinery and equipment they order. It is also important to make certain that these are complete and to verify their quality. For example, more than 70 percent of the agricultural machinery is shipped by the supplier-plants in disassembled or semi-assembled condition. To help the kolkhozes and sovkhozes, Sel'khoztekhnika enterprises and organizations have set up the assembly, adjustment and breaking in of machinery received from industrial enterprises. More than 1,600 machine assembly shops and sections are now operating at the system's supply bases. Each year they assemble around 1.2 million machines received by agriculture, which is one third of the total. This form of pre-sale services will be further developed. The saving to the kolkhozes and sovkhozes from the organization of centralized agricultural machine assembly is calculated as averaging 8-10 rubles per machine. The complete conversion to this assembly system will make it possible to free more than 30,000 machine specialists and to save more than 40 million rubles annually.

More attention has recently been given to the adoption of automated control systems for improving supply management in Goskomsel'khoztekhnika. The system now has 118 computer data centers equipped with almost 200 electronic computers. There are more than 2,000 primary information processing stations and more than 3,300 dispatch points, which exercise operational control. An information retrieval system for stocks and spare parts deliveries constitutes an integral part of the automated control system for agriculture's material and technical supply. It is already being used in more than 30 oblast associations. Together with other measures, the conversion to the automated control system has made it possible for the Belorussian SSR's Goskomsel'khoztekhnika, as an example, to reduce the volume of orders for assemblies and parts for agricultural machinery by 25 percent over the past 4 years. This includes a reduction of 10 million rubles in orders for assemblies and parts for tractors, while the technical readiness of the machine and tractor pool has been increased to 95 percent. This permitted Belorussia to reduce orders for spare parts to 8 million rubles below the norm for 1984.

The restoration of worn-out parts is one of the additional sources for increasing our stocks of spare parts. Studies have shown that an average of 20-45 percent of the parts on tractors sent for major overhauls are perfectly suitable for continued use, 20 percent are discarded entirely due to breakage or extensive wear, and 30-50 percent of the parts can be used for another season if their initial parameters are restored. The use of modern technologies makes it possible to restore parts to a quality not inferior to that of new parts, and the basic cost is only 60-70 percent of the cost of new items. Restoring 1 million rubles worth of parts which have used up their service life saves the national economy

almost 2,000 tons of rolled metal. Enterprises of the USSR Goskomsel'tekhnika restored almost 500 million rubles worth of worn-out parts in 1983. This is the equivalent of approximately 800 million rubles worth of new spare parts. These volumes will be increased considerably in the future.

The main directions for the development of this branch involve creating specialized enterprises, shops and sections, outfitting them with high-precision and highly productive equipment, and making extensive use of the most modern and effective methods of restoring worn-out parts. The latter primarily include gas-plazma and plazma spray painting with durable powder-metal materials, laser build-up and many other methods. This problem is being resolved with modern science and advanced practices. The Board of the USSR Goskomsel'khoztekhnika and the Presidium of the USSR Academy of Sciences have adopted a joint resolution, which outlines specific measures for the application of scientific and technological progress in the restoration of worn-out parts.

An important task was brought out at the December 1983 Plenum of the CPSU Central Committee--to achieve an above-plan increase of 1 percent in labor productivity in all sectors of the national economy and to reduce production costs by an additional 0.5 percent. The fulfillment of this party assignment for the 1984 plan will permit Goskomsel'khoztekhnika as a whole to reduce the basic cost of the products, jobs and services by 50 million rubles and to increase their volume by 110 million rubles. Competition presently underway at enterprises and organizations in the system is aimed at the achievement of these results.

Systematic and purposive work to further improve control and bring the forms of control into conformity with modern management conditions is also helping to achieve this.

Around 650 organizations have been eliminated in the USSR Goskomsel'khoztekhnika since the May 1982 Plenum of the CPSU Central Committee, and the number of workers in the system has been reduced by 32,000 people, or almost 10 percent. Certain basic changes have been made in the structure of the Union committee and its local agencies. Among other things, the new Main Administration for Organizing Services for the Agroindustrial Complex has been established to improve interbranch relations between Goskomsel'khoztekhnika and the kolkhozes, sovkhozes and other enterprises of the agroindustrial complex. The General Plan for Managing Enterprises and Organizations has been worked out. The main attention is focused on further strengthening the system's main production element--the rayon associations--the role and importance of which has been growing considerably as a result of the creation of rayon agroindustrial associations. This is due to the fact that their repair shops, technical service stations, exchange points and other production subdivisions are directly involved in the operations of the farms and significantly influence the end results of their work.

A new standard statute on the awarding of bonuses to workers, managers, engineering and technical personnel and other specialists and white-collar workers of rayon (inter-rayon) associations and departments for supplying production equipment for agriculture has been established to increase the incentives for workers of enterprises and organizations in the Sel'khoztekhnika system to enhance the effectiveness of kolkhoz and sovkhoz production. The size of incentives for workers directly involved in providing services for kolkhozes and sovkhozes now depends in great part upon output on the farms serviced. If weight gains increase

in a livestock complex, for example, the team of fitters servicing the farm's equipment are paid bonuses out of the funds of the rayon Sel'khoztekhnika.

Managers, engineering and technical personnel and other specialists of the Sel'khoztekhnika rayon associations and branches are awarded bonuses on the basis of annual results for each percentage of growth achieved in agricultural output over the average annual level achieved for the preceding 5 years on the kolkhozes and sovkhozes they service--up to 2 percent of their annual position salaries. This category of workers receives bonuses in the same amount for each percentage of profit or net income earned over the annual level achieved for the preceding 5 years on the farms they service. If all of the farms receiving the services fulfill their plans for increasing agricultural output, the bonuses paid for increasing output and profits increase by 30 percent. If fewer than 80 percent of the kolkhozes and sovkhozes meet the assignments, however, the size of the bonuses for managers, engineering and technical personnel and other specialists and white-collar workers of the rayon Sel'khoztekhnika is reduced by 30 percent. Bonuses are also reduced in those cases in which plans for the procurement of coarse and succulent feeds are not fulfilled and when certain other terms are not met.

Half of the above-plan profits for rayon associations was previously transferred to the budget. It is now transferred to the kolkhozes, sovkhozes and other agricultural enterprises and organizations in proportion to the value of the work they have performed. The remaining 50 percent remains at the disposal of the rayon agricultural equipment associations. It should be pointed out that approximately half of the profits obtained by Goskomsel'khoztekhnika do not come from services performed for the kolkhozes and sovkhozes, but from the hauling of sugar beets, which is paid for by the Ministry of the Food Industry, the delivery of grain, paid for by the Ministry of Procurement, and for sub-contracted installation work paid for by the Ministry of Rural Construction. The rates for most types of services performed for the kolkhozes and sovkhozes, as well as the surcharges for materials and equipment sold, have remained constant, while some of them have even been reduced, despite the fact that prices for materials and spare parts have increased. In 1982 the profitability level for supply work was only 3.2 percent for the USSR Goskomsel'khoztekhnika, and 5.9 percent for the rayon agricultural equipment associations, 2.2 percent for motor transport work, and 1 percent for the technical servicing of the machine and tractor pool. These figures provide a graphic picture of Sel'khoztekhnika's earning capacity and reconfirms the fact that the system's profitability is the lowest of all the ministries and departments making up the agroindustrial complex. In view of this, the assertions made by the authors of many publications to the effect that Goskomsel'khoztekhnika enterprises and organizations are receiving excessive profits sound strange at the very least.

At the present time accounts between the rayon agricultural equipment associations and the kolkhozes and sovkhozes for the repair and technical servicing of the machine and tractor pool are kept below annual ceilings approved by the rayon agroindustrial associations, based on outlays which are not to exceed average specific actual expenditures by the rayon's farms for these types of services for the 3 preceding years, taking planned accumulations into account. If the cost exceeds those ceilings, then the excess is charged against the performance of the rayon Sel'khoztekhnika associations.

Production relationships between the kolkhozes, sovkhozes and other agricultural enterprises and organizations and Goskomsel'khoztekhnika's rayon production

associations servicing them are based on contractual principles which define their recriprocal responsibility for the timely and quality fulfillment of those relationships. In accordance with the decree passed by the CPSU Central Committee and the USSR Council of Ministers, "On Perfecting Economic Relations Between Agriculture and Other Sectors of the National Economy," the USSR Goskomsel'khoztekhnika, together with the USSR Ministry of Agriculture and the other ministries and departments concerned, worked out and ratified the new Standard Agreement and the Statute on the Procedure for Concluding and Fulfilling the Agreement. These documents establish increased liability on the part of Sel'khoztekhnika's rayon production associations for violations of specified target dates for fulfilling the contractual obligations and the quality with which they are fulfilled.

Fines have now been established not just for breakdowns of machinery through Sel'khoztekhnika's fault. Compensation is also exacted for its downtime, regardless of the duration. When tractors, combines and other machinery stand idle as a result of the delayed satisfaction of complaints, the system's production associations reimburse the farms for their losses on the basis of the planned value of a machine-day for the entire period of downtime over and above the standard periods.

Statistical accounting based on indices describing the fulfillment of contracts for production equipment servicing for the farms is being introduced to enhance control. A new statute on deliveries of equipment and other materials and equipment to kolkhozes, sovkhozes and agricultural enterprises and organizations has been ratified. Rayon production associations are now concluding delivery agreements with the farms. This document establishes the procedure for delivering products and takes into account their quality and price, and the accounting procedure as well as the material contractual liability of the parties. Goskomsel'khoztekhnika pays the farms a fine of up to 80 percent of the cost of products it fails to deliver or which it delivers later than the established target dates. If a rayon agricultural equipment association delivers products which are defective or which do not conform to the standard and technical specifications, or if it delivers incomplete products, the farm exacts from the association a non-acceptance fine in the amount of 20 percent of their value, and 30 percent in the case of products in the highest quality category.

Economic relations between the Sel'khoztekhnika and the kolkhozes and sovkhozes are being improved in all areas of production equipment support for agriculture and at all levels of management, especially the system's enterprises themselves. Today, more than 300 rayon Sel'khoztekhnika associations are successfully applying the new accounting procedure for technical servicing and routine repairs of equipment for animal husbandry. It essentially amounts to the system's specialized services assuring the uninterrupted operation of all machinery and devices on the farms and in the feed shops, and the kolkhozes and sovkhozes pay for their services not on the basis of volumes of work actually performed, but on the basis of a standard cost for the repair work and technical servicing. This kind of relations provides no incentives for the rayon Sel'khoztekhnika associations to perform unplanned work. Attention is focused entirely on assuring good dependability for the farm equipment. In certain groups of farms the Sel'khoztekhnika workers receive additional payment for increasing production and improving the quality of the product from livestock operations.

Special importance is presently being attached to the creation of a unified engineer service in the rayon agroindustrial associations. The Verkhnekhavskiy Rayon Sel'khoztekhnika in Voronezh Oblast, for example, has assumed complete responsibility for the timeliness and the quality of the repair and technical servicing of machines and equipment on the farms and for maintaining the machine and tractor pool at a constant high level of technical readiness. All of the kolkhozes have rented the shops and technical servicing points to the rayon Sel'khoztekhnika on a contractual basis. Repair workers, master adjusters and part of the engineering and technical personnel have been transferred to the rayon Sel'khoztekhnika staff.

A unified service has been formed in the rayon for the repair and technical servicing of means of mechanization and electrification of the kolkhozes and sovkhozes, including animal husbandry and feed production. The rayon Sel'khoztekhnika has organized 17 production equipment sections out of the shops and technical service points rented on the kolkhozes and sovkhozes. The experience of the Verkhnekhavskiy Rayon Sel'khoztekhnika is being adopted in 20 oblasts, krays and autonomous republics, on more than 700 of the nation's farms. It has also been extensively adopted in Gorkiy, Novgorod, Orel, Belgorod and Ivanovo oblasts, in the North Osetian ASSR and the Kabardino-Balkar ASSR.

Inter-farm mechanization enterprises have also been developed as a form of engineer service in agriculture. They are created on a cooperative basis and include the entire machine and tractor pool and the repair and maintenance base of the kolkhozes, the sovkhozes and Sel'khoztekhnika. This system is being successfully employed in Stavropol Kray, Kurgan-Tyube and a number of other oblasts (EKONOMIKA SEL'SKOGO KHOZYAYSTVA, No 8, 1983, pp 56-57).

By decision of the rayon agroindustrial association, the Shargorodskiy Rayon Sel'khoztekhnika in Vinnitsa Oblast has been charged with complete responsibility for the organization, the use, the repair and technical servicing of the machine and tractor pool on the rayon's farms. Engineers-and-technologists serve as the middlemen between this association and the kolkhozes and sovkhozes. Each of them is assigned one farm and motor transport. The matter of eliminating duplication of the duties performed by the engineer-and-technologist and the chief kolkhoz engineer is being studied. These positions have been combined on five rayon farms as an experiment, and the chief engineer's duties have been asigned to the rayon Sel'khoztekhnika's chief engineer with a corresponding raise in pay. The amount of time required to perform all the field operations was cut markedly in Shargorodskiy Rayon in 1983 as a result of these and other measures. For example, the grain was harvested 3-5 days earlier than in the previous year on the kolkhozes imeni Kotsyubinskiy, imeni Petrovskiy, imeni Frunze, imeni Ivan Franko and imeni 26th Party Congress. Tractor downtime due to technical trouble was reduced by 120 tractor-days.

The centralized technical servicing and repair of equipment for oil depots and oil bases with Goskomsel'khoztekhnika personnel and equipment is advantageous for the farms. Most of the nation's agricultural enterprises are now covered by this kind of service. Its adoption is making it possible to reduce the consumption of gasolene and diesel fuel by 3-5 percent annually and to save around 1.5 rubles per ton of petroleum products.

The extensive adoption of intra-farm accounting and the brigade contract system is helping to increase the incentive and the responsibility of the system's labor collectives for the achievement of good end results. Where the brigade labor organization and incentive system is being used, labor productivity is 20 percent higher, the amount of time required to perform the operations is reduced, product quality improves and production costs drop, a climate of mutual demandingness and responsibility is created, and the dependency between wages and the end results is strengthened. With the adoption of the brigade labor organization and incentive system at the repair shop of the Kozelskiy Rayon Sel'khoztekhnika in Kaluga Oblast, for example, labor productivity increased 27 percent and the size of a brigade was reduced by 12 people. A total of 57,000 brigades are operating at enterprises of the USSR Goskomsel'khoztekhnika, 37,000 of them under collective contract. They cover around half of the workers. The brigade labor organization and incentive system will become the main system in the Goskomsel'khoztekhnika during the current five-year period.

Spring is in full bloom in the southern part of the nation, and large-scale field work will soon begin in all the other regions. Goskomsel'khoztekhnika has been assigned the task of assuring that the machine and tractor pool is readied in good time and that it is used effectively so as to perform the planting at times consistent with the best agricultural practices. In response to decisions coming out of the December 1983 Plenum of the CPSU Central Committee the collectives of Goskomsel'khoztekhnika enterprises and organizations have launched socialist competition to further improve engineer and technical services for the kolkhozes and sovkhozes, to improve material and technical supply, transport, machine and other operations and to improve their quality, in order, together with the farm workers, to achieve a further increase in the yield from the fields and the productivity of the farms and to achieve good end results in agricultural production.



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## AGRO EQUIPMENT READINESS IN RSFSR, SIBERIA REVIEWED

Omsk ZEMLYA SIBIRSKAYA, DAL'NEVOSTOCHNAYA in Russian No 2, Feb 84 pp 2-3

/Article by D. E. Tsybarev, chief, Central Directorate, RSFSR Ministry of Agriculture: "Full Readiness For Technology"/

/Text/ The expanses of Siberia and the Far East are immense. Tens of millions of hectares of agricultural lands and fields are assigned to the kolkhozes and sovkhozes of this region. Understandably, it is imperative that this land be cultivated at the proper time. If the work methods or the scheduled time for carrying out work on the cultivation of one or another crop is infringed upon, there will be less than the programmed harvest obtained. If the harvesting is not accomplished in time, there will again be losses. And the time frames for carrying out agricultural work in the region are strict. Taking this into account, the operations in Siberia and the Far EAst have a varied arsenal of agricultural machines at their disposal.

But having the equipment is not enough: the equipment must be effectively used. For that reason, it is not simply by chance that the party and the government devote constant attention to this matter. Thus, the CC CPSU resolution, "On measures for the further raising of the technical level and quality of machines and equipment for agriculture, the improvement of their use and the increase in their production and delivery during 1983-1990" (April, 1983), outlined the specific goal of significantly increasing the daily output by operators of tractors, fodder harvesters and other agricultural machines, securing by this means an important reduction in the cost of diesel fuel and the expense of its maintenance.

Unfortunately, these matters are being resolved in an extremely unsatisfactory manner. For the years of the 11 Five-Year Plan, the average daily productivity of tractors on kolkhozes and sovkhozes in western Siberia has not increased and comprises 7.7 standard hectares /uslovyy etalonyy gektar/; in eastern Siberia, it has grown by only 4 percent (7.0 standard hectares); in the Far East, by 1 percent (7.3 standard hectares). There is an extremely low daily productivity for tractors in operations in the Tuvinian ASSR (5.8 standard hectares), the Chitin oblast (6.1), the Buryat ASSR (6.4) and the Irkutsk oblast (6.7 standard hectares). As far as the productivity of grain harvesting and silage harvesting combines, as well as fodder harvesting machines, is concerned, these indices are even worse.

In the first place, their terms of enforced idlensss have a negative effect on the machines' productivity. In 1983, simply for technical reasons, these amounted to 2.93 million tractor-days and 1.172 million combine days in the zone. If there were no periods of enforced idleness in the kolkhoz and sovkhoz fields, more than 19,000 tractors and more than 6,100 grain harvesting combines would be working here and the times devoted to carrying out work in the fields would be significantly reduced. There are many reasons for the enforced idleness of machines, but the most important one is the low quality of maintenance.

In recent years, the majority of the kolkhozes and sovkhozes in the Russian Federation have begun to prepare the major portion of their technology, including grain harvesting and silage harvesting combines, in the autumn-winter period. This is assisted, in large part, by the large organizational work conducted by the engineering services of operations before the beginning of the maintenance campaign. An extremely limited preparation time for machines is now becoming obligatory for everyone. The Council of Ministers of the RSFSR is directing the managers of kolkhozes and sovkhozes and of soviet and economic organs that the basic technology be put in working order by the beginning of work in the fields. Only in this case may its high-level preparedness be ensured.

The machine operators and maintenance workers of the Krasnoyarsk kray Government Committee for Agricultural Technology, who were the initiators of socialist competition for timely and high-quality technological preparation for farm work, dealt honorably with their obligations and completed maintenance on sowing and soil processing machines and implements before the beginning of 1983, while preparation of the grain harvesting combines was done by 20 April 1983. For that reason, the people of Krasnoyar carried out their sowing campaign within the tightly limited time frames and reaped their harvest under exceptionally difficult weather conditions.

One cannot say the same about other administrative rayons in the region. Thus, in the Tuvinian ASSR, the technology was prepared on an emergency basis in 1983 and the quality of maintenance was low. Due to the untimely beginning of the maintenance campaign and its poor organization here at the beginning of the spring 1983 farm work, 8 percent of the total number of ploughs and sowing machines, 10 percent of the cultivators and 18 percent of the potato planters were not maintained and did not participate in the work. Agricultural technology for farm work was not prepared in time and was of bad quality in the majority of the operations in the Chitin, Tomsk and Amur oblasts, the Khabarovsk kray and the Buryat ASSR. It was not simply by chance that under the same weather conditions as obtained in the Krasnoyarsk kray, the harvesting of bread grains was so difficult in the Chitin Oblast and the Tuvinian and Buryat ASSRs.

The question of maintenance times is not an idle one. The transfer of the maintenance work peak to the autumn-winter period is connected with the correct utilization of human resources. In addition, a large number of machine operators are able to free themselves from the maintenance shops toward spring and can participate in the farm work.

The initiators of the all-Russian (Mari ASSR and Orenburg Oblast) and all-Union (Saratov Oblast) socialist competition for timely and high-quality technological

preparation for farm work in 1984 pledged to complete the preparation of soil processing, sowing and planting machines and implements not later than 1 January 1984, the maintenance plan for the fourth quarter of 1983 by 23 December 1983 and that for the first quarter of 1984 by 20 March. They pledged to have not less than 85 percent of the tractors ready by 1 January 1984, 80 percent of the freight automobiles and 65 percent of the grain harvesting combines and fodder preparation machines by the same date; by 1 April they are to complete maintenance of the irrigation machines, and by 15 April they will completely prepare the grain harvesting combines and the fodder preparation technology. They will have 93-95 percent of the tractors in good order.

Most of the oblasts, krays and autonomous republics prepared themselves well for the maintenance campagin. Plans for maintenance and definite times for its completion were brought to every maintenance enterprise connected with kolkhozes, sovkhozes and the Government Committee for Agricultural Technology. In many oblasts, krays and ASSR's, as a help to the village, the patronage organizations sent maintenance workers from their own enterprises. In machine shops and maintenance shops of operations and rayon agricultural technologies, a large volume of labor upswing is now observed, and socialist competition for early fulfillment of established plans and pledged obligations has expanded widely. In operations, with few exceptions, there has been timely checking for defective technology and its delivery to maintenance enterprises.

In all, more than 140,000 maintenance brigades and links have been established in the RSFSR, in which up to 600,000 maintenance workers and mechanization specialists are occupied. As of 10 December 1983, 91,600 grain harvesting combines (yearly plan, 101,000) and 7,200 silage harvesting combines (plan, 8,800) were delivered to the maintenance enterprises of the Government Committee for Agricultural technology. Great organizational work has been conducted and continues to be carried out to improve the working and living conditions of maintenance workers, to equip the work places with the necessary equipment and tools, as well as to organize hot meals at maintenance shops. In many oblasts, moral and material incentive measures have been found and widely applied to technical maintenance.

Thus, the Mari ASSR kolkhozes and sovkhozes, initiators of the all-Russian competition, completely maintained the sowing and soil processing machines and implements by 15 December 1983. On 1 January 1984, 77 percent of the grain harvesting combines were ready here. There was significant overfulfillment of maintenance plans for other agricultural machines. The mechanization specialists and maintenance workers of the Krasnoyarsk kray do not intend to let the positions they achieved last year out of their hands. By 1 January 1984, they had fully completed preparation of sowing and soil processing machines and implements, tractor readiness stood at 83 percent and grain processing combines at 62 percent. The kolkhozes and sovkhozes of the Krasno-Turan and Achin rayons of this kray prepared 67 percent of the grain harvesting combines. Maintenance was well organized in the operations ofthe Dovolensk rayon by the initiators of competition in the Novosibirsk oblast, where 70 percent of the grain combines were prepared, as well as in operation in the Ivanovsk, Konstantinovsk and Blagoveshchensk rayons of Amur Oblast. Maintenance is being carried out somewhat better than last year in the Buryat ASSR and the Chitin Oblast.

Wide introduction of the link and brigade forms of labor organization into many kolkhozes is promoting a higher rate and quality of maintenance in agricultural technology. As a rule, the link is organized with four-five maintenance workers and the brigade, with six-nine. There is a tinsmith and a welder in their composition. During the maintenance period, a tractor driver or combine driver is included in the composition of the link or brigade. The link (brigade) manager is not freed from other duties, but receives an additional payment of 10-15 percent of his basic salary. Under the link (brigade) organization of labor, as a rule, various devices are employed (for riveting knives, setting casings, etc.) which significantly increase labor productivity.

In case of a delay in maintenance due to the lack of spare parts, the link (brigade) is transferred to the maintenance of another machine or tractor-drawn implements. Under such an organization of labor, a combine leaves the maintenance place in a maximum of 7-8 days. For example, in the Travninskiy Sovkhoz, Dovolensk rayon, Novosibirsk Oblast, a combine maintenance link (four people), under the direction of Ivan Pavlovich Savchenko, maintained 18 grain harvesting combines during the 4th quarter of 1983. Technological preparation work was well organized in the Achin rayon agricultural technology of the Krasnoyarsk kray, where 64 grain harvesting combines (the plan called for 54) and 118 tractors (plan, 113) were maintained during the 4th quarter.

In addition, the maintenance rate of agricultural technology has greatly increased this year in the operations of the Kemerovsk and Tomsk oblasts, the Khabarovsk kray, the Tuvinian ASSR and several other oblasts, krays and ASSR's of the region. Many kolkhozes and sovkhozes of the Tuvinian ASSR did not learn from their lessons of last year and, as before, set about in an unorganized manner to prepare the technology for farm work in 1984. As of 1 December 1983, in operations of the Pii-Khemsk rayon of this republic, preparedness of the combine fleet amounted to 12.9 percent, while in the Ulug-Khemsk rayon, it was 17.6 percent. In the C. K. Tok sovkhoz, Tandinsk rayon, the shop was not prepared for the autumn-winter maintenance.

In comparison with last year, there was two-four percent lower preparedness of sowing and soil processing machines and implements, and six percent lower for grain harvesting combines in operations of the Kemerovsk Oblast for the same period. In the Tomsk Oblast, the figures were 6-10 percent and 12 percent lower preparedness respectively. In the Khabarovsk kray, there was three percent lower preparedness for combines. In addition, absolute preparedness in the kray, as of 1 January 1984, amounted to only 36 percent: 74 percent of sowing machines, 66 percent of potato planters and 68 percent of cultivators. They also do not hurry here to deliver the maintenance fund to the enterprises of the Government Committee for Agricultural technology. For the kray as a whole, only 64 percent of the planned grain harvesting combines and 65 percent of the silage harvesting machines were delivered to these enterprises. In the Chitinsk Oblast, only 45 percent of the planned delivery of grain harvesting combines was fulfilled and in the Buryat ASSR, 24 percent.

It is surprising how calm the managers of individual rayon agricultural technologies are with regard to the preparedness of type K-700 energy-sufficient tractors. As of 1 January 1984, the number of these "heroes of the steppes" in

working order amounted to only 65 percent in the Chitinsk oblast; in the Amur oblast--66 percent, in the Buryat ASSR--64 percent and in the Tuvinian ASSR--58 percent. In the Altai kray, 1,700 such tractors were not in working order. According to the well-known resolution of the CC CPSU and the Council of Ministers of the USSR, complete responsibility for the technical condition of this machine is borne by the local rayon agricultural technology. But responsibility for this aspect of work is not yet felt from their side.

Many objectively caused difficulties are encountered in the process of the maintenance campaign: Many individually designated spare parts are in short supply because of low quotas; a number of plant suppliers do not provide timely shipment of components, assemblies, aggregates, etc. Aside from this, has everything that we have done ourselves, all of our internal reserves, been exhausted? The most general analysis indicates that this is not the case. For example, maintenance capacities are used unsatisfactorily in a number of kolkhoz and sovkhoz shops, maintenance places are poorly equipped, work brigades and links are not established and in some operations, maintenance is carried out by the individual efforts of the combine operators themselves. In some places, machine defects were not corrected right up until the new year. The maintenance enterprises of the Government Committee for Agricultural Technology still does not occupy itself sufficiently with the rehabilitation of parts.

The introduction of brigade contracts in maintenance is extremely slow in the region. In the press, for example, there have been repeated reports about the experiment in the Zalarinskiy Sovkhoz, Irkutsk Oblast, and the Chistoostrovskiy Sovkhoz, Emel'yanovsk rayon, Krasnoyarsk kray. The essence of their experiment involves the fact that machine maintenance is carried out here by means of the flow method according to a single order. Thus, in the Zalarinskiy Sovkhoz, money earned by the brigade is divided among its members according to the coefficient of labor participation and the conventional tariff category. Upon fulfillment of the stipulated goal, the brigade is paid a monthly bonus--up to 40 percent of salary. All the brigade members have closely related professions. This experiment has not been widely promoted until now.

There is very little time left until the beginning of spring farm work. If the maximum force is exerted, it is still possible to catch up with improvements. For this purpose, it is imperative to construct, where required, light maintenance facilities with plastic covering, to organize additional place in existing shops and warm garages, to arrange for the rehabilitation of worn out parts and assemblies, to ensure double shift work in shops of the rayon agricultural technology, as well as in kolkhozes and sovkhozes, and to ask for help from the patronage organizations. The initiators of the all-Russian socialist competition are acting now in this manner. It is necessary for their experience to become the property of all operations in the region.

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# INTENSIFICATION OF AGROCHEMICAL SERVICE DISCUSSED

Moscow KHIMIYA V SEL'SKOM KHOZYAYSTVE in Russian No 4, Apr 84 pp 3-6

/Article by A.M. Artyushin, 1st deputy chairman of the Soyuzsel'khozkhimiya Association: "Tasks for Improving Agrochemical Services for Agriculture"/

/Text/ The 26th CPSU Congress, in advancing a broad program for social construction and for improving national well-being, assigned a priority task -- improving the supply of food products for the population. In the USSR Food Program approved during the May (1982) Plenum of the CPSU Central Committee, specific goals are set forth which must be achieved by the country's agriculture prior to 1990.

A distinctive feature of the agrarian policy during the 1980's, as pointed out during the 26th CPSU Congress -- reliance upon the return from capital investments and upon raising the productivity of agriculture.

The solving of this task is being ensured to a large degree by the specialized agrochemical service. Its creation began in 1964 with the organization of 206 zonal agrochemical laboratories, for which a modern logistical base was available 5 years later. Agrochemical laboratories began carrying out planned work in connection with providing agrochemical services for the kolkhozes and sovkhozes (agrochemical soil inspections, preparation of cartograms and daily plans for the use of fertilizers, carrying out field experiments with fertilizers, determining the quality of feed and so forth). TsINAO /Central Institute for Agrochemical Services for Agriculture/ was created for the purpose of providing scientific-methodological management for the agrochemical service.

The structure of the Soyuzsel'khozkhimiya Association system includes: 14 production-scientific associations for providing agrochemical services for agriculture in the union republics and subunits which provide agrochemical services of the agroindustrial association of the Estonian SSR; 155 production associations in autonomous republics, krays and oblasts; 3,077 rayon (inter-rayon) production associations; 542 departments (branches); 106 supply bases for chemical products; 94 motor vehicle enterprises and 234 other organizations. The overall number of workers in the Soyuzsel'khozkhimiya system -- more than 450,000 individuals. The structure of the all-union association includes the following scientific institutes: TsINAO, Agropribor

NPO /scientific production association/, VNIPTIOU, NIPTIZh, VNIPIagrokhim. In the union republics, the following organizations have been transferred over to the associations: in the RSFSR -- VNIPTIKhIM /All-Russian Scientific-Research and Planning Technological Institute for the Use of Chemical Processes in Agriculture/ and the All-Russian Scientific Research Institute for Plant Protection, in the Georgian SSR -- the Georgian Scientific Research Institute of Soil Science and Agrochemistry and the Georgian Scientific-Research Institute for Plant Protection, in the Azerbaijan SSR -- Azerbaijan Scientific-Research Institute for Plant Protection, in the Moldavian SSR -- Moldavian Scientific-Research Institute of Soil Science and Agrochemistry, in the Armenian SSR -- Armenian Scientific-Research Institute for Plant Protection, in the Kirghiz SSR -- Kirghiz Scientific Research Institute of Soil Science and in the Turkmen SSR -- Turkmen Scientific-Research Institute of Soil Science.

The structure for oblast associations includes the operation of 206 planning-research stations for the use of chemical processes in agriculture, 14 republic and 145 oblast plant protection stations, 1,837 rayon (inter-rayon) plant protection stations and approximately 7,000 rayon and farm agrochemical laboratories.

Within the Soyuzsel'khozkhimiya Association system there are 267,400 tractors and motor vehicles, 450,000 specialized machines of various types and warehouse facilities for the one-time storage of 11.8 million tons of chemical products. In addition, approximately 4,000 chemical points and more than 29,000 fertility detachments have been organized at kolkhozes and sovkhozes for the carrying out of agrochemical work and here there are also warehouse facilities for storing 23.4 million tons of mineral fertilizers and chemicals.

The overall volume of work and services provided by Sel'khozkhimiya associations in 1983 was valued at 8,836,600,000 rubles, or 117 percent of the plan, including the carrying out of 1,660,700,000 rubles worth of agrochemical work (106.7 percent), 874 million rubles worth of motor transport work (109.9 percent) and the turnover in goods amounted to 6,113,400,000 rubles (121 percent). The resources of Sel'khozkhimiya were employed for moving 503.5 million tons of organic fertilizer out onto the kolkhoz and sovkhoz fields and for applying 366.6 million tons. Mineral fertilizers were applied to an area of 32.6 million hectares, lime was applied to 6.9 million hectares of acid soil and pesticides were applied to an area of 21.1 million hectares of sowings. The enterprises procured 67.8 million tons of peat and 4.5 million tons of lime. The 1984 plan calls for a further increase in the work volumes carried out on the whole within the Soyuzsel'khozkhimiya Association system to 109 percent. For the RSFSR the work volumes are 111 percent, the Ukrainian SSR -- 110 percent, Kazakh SSR -- 115 percent, Lithuanian SSR -- 116 percent and the Moldavian SSR -- 112 percent.

Based upon the extensive introduction of scientifically sound systems for the use of chemical processes in farming and also progressive technologies for the cultivation of agricultural crops, intra-farm accounting and collective contracts and a strengthening of the regime for achieving economies and lowering labor expenditures, the plans call for labor productivity associated with leading agrochemical operations to be raised a minimum of 1 percent and for production costs to be lowered by 0.5 percent compared to the indicators for industrial financial plans.

The experience of agricultural production over the past few years has convincingly shown that the greatest results from fertilization are achieved when a high culture of farming is observed, when a complex of measures aimed at combating weeds and diseases is carried out and also when use is made of highly productive varieties of agricultural crops.

Grodno Oblast can serve as an example of the effective use of chemical resources in agriculture. The structure of the oblast's Sel'khozkhimiya Association includes: 17 rayon and 1 inter-rayon association, which have at their disposal 1,540 tractors, more than 1,000 motor vehicles, 129 excavators, 922 organic and mineral fertilizer spreaders and other machines, an oblast agrochemical laboratory and a plant protection station. In all, there are more than 5,000 persons involved in this work, including 3,055 tractor operators and drivers.

Taking into account the twofold turnover, the warehouse capabilities of the kolkhozes, sovkhozes and Sel'khozkhimiya associations are making it possible to accept, store and process the chemical means available for a particular technology, in conformity with the standard requirements and while precluding the possibility of fertilizer losses at the same time.

The rayon associations of Sel'khozkhimiya are exercising control over the quality of the chemical products being delivered. Claims are presented against the supplier-plants in the case of short deliveries or violations of the standards. During 1982, the oblast presented 166 such claims the overall value of which was 412,500 rubles; 120 of these claims were satisfied in the amount of 352,000 rubles.

The issuing of chemical resources to the farms is carried out strictly according to weight and the deliveries are made by the motor transport vehicles of the associations on a consumer-farm prepaid basis.

The proportion of mechanized operations carried out by the oblast Sel'khozkhimiya Association is 100 percent (of the overall volume) for deliveries of mineral fertilizers and lime materials and for liming acid soils and applying liquid ammonia, more than 40 percent for the hauling and 25 percent for applying organic fertilizers, 75 percent for the extraction and 50 percent for hauling peat and 70 percent for providing protection for plants.

During the period which has elapsed since 1965, three cycles for the liming of acid soils have been carried out on an area of 2.2 million hectares and the liming of haying and pasture lands has commenced. The application of organic fertilizer to the soil has increased from 7 to 12.3 tons per hectare.

As a result of the correct use of mineral and organic fertilizers, liming materials and other chemical resources (according to data obtained from agrochemical soil inspections), the average phosphorus content has been raised and is now 149, potassium -- 151 milligrams per kilogram, humus 1.82 percent and pH 5.6.

For the oblast as a whole, the average annual cropping power for grain crops during the years of three five-year plans increased by almost threefold, potatoes -- by twofold and sugar beets -- by a factor of 1.9.

According to the operational results for 2 years of the 11th Five-Year Plan, the oblast successfully fulfilled and over-fulfilled its plans for selling grain, potatoes, sugar beets, flax fiber and vegetables to the state.

Since 1981, the Soyuzsel'khozkhimiya Association has been carrying out KAKhOP /kompleksnoye agrokhimicheskoye okul'turivaniye poley; all-round agrochemical cultivation of fields/. The data for cropping power on these fields testifies to the high return being realized from this measure. In 1983 the Sel'khozkhimiya associations of union republics carried out KAKhOP on an area of approximately 2.0 million hectares, in 1984 3.0 million hectares will be worked in this manner and in 1985 -- 4 million hectares.

Measures for the all-round agrochemical cultivation of fields are being carried out in an especially successful manner in the RSFSR. In 1983 the operational experience of the Rossel'khozkhimiya Association in this regard was approved by the Board of the USSR Minsel'khoz /Ministry of Agriculture/

Among the factors which determine the effectiveness of mineral fertilizers, a very important place is occupied by their correct utilization on irrigated and drained lands. In order to obtain the guaranteed yields from these lands, mineral fertilizers, ameliorants and pesticides are being allocated on the basis of complete norms. The programming of agricultural crop yields is being introduced into operations on an area of 3.2 million hectares. The work volumes for the agrochemical servicing of reclaimed lands have been included in the work plans of the associations for 1984.

The experience accumulated in agricultural production in recent years has convincingly shown that the solutions for the complicated problems of the field crop husbandry branch require the introduction of intensive and industrial technologies for the cultivation of grain, technical and forage crops.

In 1984 the Sel'khozkhimiya associations must allocate the mineral fertilizers and other chemical resources in full volume (in conformity with the programmed cropping power) for all crops being cultivated using industrial technologies and with a complete complex of agrochemical operations being carried out.

An intensive technology for the cultivation of winter wheat is being introduced into operations on an area of 20,000 hectares in 1984. The task consists of obtaining more than 60 quintals of grain per hectare from this area. The Sel'khozkhimiya associations must play a very important role in the carrying out of this work. They must perform diagnostic work with regard to nitrogen nutrition and ensure the carrying out of spring top dressings in strict conformity with the recommendations of the agrochemical service, organize the use of retardants and plant protective agents in the southern regions of the country and they must implement measures aimed at ensuring good strong and durum wheat yields. This experiment will be carried out on comparatively small areas and yet it will make it possible in the future to develop a technology for obtaining maximum yields under production conditions and for making the most efficient use of the still limited chemical resources. This work will be carried out by the Tambov, Lipetsk, Krasnodar, Stavropol and Ivano-Frankovsk stations for the use of chemical processes.

The rates for carrying out liming work are still inadequate. In a majority of oblasts these rates are ensuring only a 10 year and in some oblasts -- even a 15-20 year cycle for applying lime, instead of the scientifically sound period of 4-5 years. Each year the liming of acid soils must be carried out on an area of 13 million hectares and this requires no less than 105 million tons of lime materials. In 1982, 7.2 million hectares were actually limed (with 40.2 million tons of lime being applied). Each year the planned delivery volumes for lime materials are falling short: during the 10th Five-Year Plan, only 179 million tons were delivered instead of 220 million tons.

USSR Minsel'khoz has examined and approved the operational experience of the Sel'khozkhimiya enterprises in Ternopol Oblast with regard to organizing the production of lime and the use of defecate. During the next few years, each branch having supplies of lime materials will be assigned the task of organizing their procurements based upon the experience of the workers in Ternopol Oblast.

The rates for raising the productivity of solonetz lands continue to remain extremely low. In 1982, gypsuming was carried out on an area of 218,000 hectares and land reclamation work -- on 467,000 hectares.

In 1984 the liming of acid soils must be carried out on an area of 7.5 million hectares and the gypsuming of solonetz soils -- on 375,000 hectares. The Sel'khozkhimiya associations must ensure the carrying out of the mentioned work in conformity with the planning-technological documentation.

Measures for the reclamation of solonetz soils are well organized at the Kamyshin Branch of the Bolgograd station for the use of chemical processes. In the zone serviced by the branch, the reclamation of solonetz soil was carried out on an area of 28,000 hectares during 1981 and 1982 alone; on farms in Pallasovskiy, Nikolayevskiy, Zhdanovskiy and Kamyshinskiy rayons, the expenditure of 2,330,000 rubles for land reclamation work were repaid within 4 years. A profit of 282,000 rubles was realized.

The production of high quality organic fertilizers must be placed on an industrial basis. This requires that all republics, krays and oblasts organize the construction of manure pits in a decisive manner. It bears mentioning that the plan for placing such facilities in operation during 2 years of the current five-year plan was fulfilled by only 17 percent. Nor are the tasks for peat production being fulfilled. Compared to a plan calling for 160-170 million tons of peat annually, only 140-147 million tons are being procured for satisfying the agricultural requirements. The plans call for the preparation and application of not less than 990 million tons of high quality organic material in behalf of the 1984 harvest.

The Soyuzsel'khozkhimiya Association is devoting a great amount of attention to the band method for applying mineral fertilizers. Domestic and foreign experience reveal that the application of fertilizers using the band method is effective and that it serves to raise the coefficient of use of mineral fertilizer nutrients by 10-15 percent. In 1983, during the sowing of winter crops, extensive use was made of the band method of fertilizer application in Moscow, Dnepropetrovsk and a number of other oblasts. The mass production of equipment will make it possible to carry out this work on an area of 5.6

million hectares in 1984. The Krasnoyarsk station for the use of chemical processes was one of the first in eastern Siberia to introduce the band technology for applying fertilizers. From 1980 to 1983 the area fertilized using this method increased by almost twofold and reached 921,000 hectares, with the additional yield of grain amounting to 461,000 tons. The use of the band method on an area of 443,000 hectares in Tyumen Oblast made it possible to raise the return per kilogram of active agent by 2.9 kilograms of spring wheat grain. Moreover, even during the unfavorable year of 1983, many farms obtained grain and pulse crop yields of 26-33 quintals per hectare.

In 1984 the plans call for a top dressing to be applied to the winter grain crops on an area of 2.7 million hectares (with the results of nutritional diagnostics being taken into account). Such diagnostic work was well organized in Krasnodar Kray: in 1983 it was carried out on an area of 300,000 hectares; on one half of the sowing areas the nitrogen dosage was lowered by 20-30 kilograms per hectare upon the recommendation of a station for the use of chemical processes. For the kray as a whole, the additional income realized as a result of this measure amounted to 1.8 million rubles.

Under the conditions imposed by the intensive use of chemical processes in agricultural production, an important role is played by microelements -- boron, molybdenum, manganese, copper, zinc, cobalt and iodine. Boron fertilizers raise the cropping power of sugar beets an average of 12 percent and molybdenum fertilizers provide an increase of 13-31 percent in the yield of pulse crop seed and of 18-44 percent in fodder. The use of microelements in the form of salt additives to the principal fertilizers is considered to be most advisable and economical. The work of examining and issuing recommendations on the use of microfertilizers on farms in Kaliningrad Oblast is well organized. As a result, 180 farms are obtaining an additional income of 750,000-900,000 rubles annually.

The highly effective use of chemical resources requires balanced applications of fertilizers and pesticides. In 1984 the task of the plant protection service of the Soyuzsel'khozkhimiya Association consisted of developing and providing all of the oblasts, rayons and farms with a forecast of the spread of the agricultural crop pests and diseases and organizing protective measures in the following volume: the chemical disinfection of spring grain crop seed -- for 88 million hectares, winter grain crop seed -- 30 million hectares; use of pesticides for combating pests and diseases -- on 132 million hectares, against weeds -- on 128.8 million hectares and biopreparations -- on 31 million hectares.

In recent years the growth in cropping power for the principal agricultural crops has not kept pace with the rates for the use of chemical processes in farming. The Sel'khozkhimiya associations must analyze the carrying out of the all-round programs for introducing scientifically sound farming systems, raising the fertility of soils, the plans for developing the logistical base for the use of chemical processes and the effectiveness of chemical resources on each farm, rayon and oblast and approve specific measures for correcting the shortcomings uncovered. The organization and carrying out of work concerned with the delivery, storage and application to the soil of mineral fertilizers and other chemical resources must be performed at a high level and contractual obligations and mutual accounts with the farms for agrochemical servicing work and for the quality and effectiveness of agrochemical operations must be observed.

The great difficulties being experienced in the work of the agrochemical service are the result of its weak logistical base. This applies in particular to the rail-served warehouses. Up until recently, mineral fertilizer was unloaded from freight cars onto outdoor platforms at 483 points. The availability of rail-served warehouses is 50 percent and it is for this reason that approximately 6 percent, or 1.3 million tons of fertilizer nutrients, is lost annually.

The contractual measures adopted in 1983 by the USSR Ministry of Agriculture, the Soyuzsel'khozkhimiya Association and the contracting ministries have made it possible to fulfill the planned tasks for placing underway construction projects in operation. During 1983, 980 million rubles or 106 percent of the annual plan, were used. This was greater than the figure for 1982 by 83 million rubles. The plan for construction-installation work was also fulfilled. The annual plan for placing warehouses in operation was fulfilled in the Ukrainian, Belorussian, Kazakh, Azerbaijan, Lithuanian, Moldavian, Kirghiz, Turkmen and Armenian SSR's, but the plan for placing rail-served warehouses in operation in the Russian Federation was under-fulfilled. Of the 24 rail-served liquid ammonia warehouses planned for 1983, only eight were introduced into operations. The deliveries of bucket cranes are increasing all too slowly.

Many ministries and departments did not fulfill their 1983 plans for supplying agriculture with mineral fertilizers, ameliorants, pesticides, feed preservatives and feed additives and this undoubtedly caused considerable shortfalls in the production of agricultural goods. The low quality of the chemical resources being made available warrants special mention. In accordance with the results of arbitration and controlled analyses, violations of the standards and technical conditions occurred in the case of 10-12 percent of the mineral fertilizers, 27 percent of the peat and 22 percent of the lime materials. For example, owing to non-uniformity in the granulometric structure and low durability of the granules, difficulties are encountered in dry mineral fertilizer mixing. This results in the fertilizer being distributed irregularly over a field, thus causing a reduction of 20 or more percent in its effectiveness.

The availability to agriculture of machines for applying mineral fertilizers and pesticides is 39 and 52 percent respectively, loading equipment -- approximately 36 percent. There are practically no loaders available for loading solid fertilizers into aircraft and helicopters. This lowers the effectiveness of use of the chemical resources.

The machines required for the high quality carrying out of agrochemical measures have been developed and recommended for production and yet they are still not being produced. This includes such machines as -- APZh-12, ZSVU-3, STT-10, RUM-16, MZhT-23, MTT-23, PZhU-5 and PZhU-9.

The problem of mechanizing agrochemical operations can be solved through the use of special heavy freight self-propelled machines possessing a high cross-country capability and equipped with interchangeable equipment for applying all types of fertilizers, ameliorants and pesticides. We have created experimental models of such machines: MVU-30, the self-propelled machine based upon use of the K-150 and K-700 tractors.

Further improvements in the efficiency of agrochemical services for agriculture constitute an indispensable condition for solving the tasks established by the party in the USSR Food Program.



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# LAND RECLAMATION MINISTER ON PROGRESS IN SOIL IMPROVEMENT

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 3, Mar 84 pp 47-53

/Article by N. Vasil'yev, USSR Minister of Land Reclamation and Water Resources; "Land Reclamation -- At a Qualitatively New Level"/

/Text/ Our Soviet land reclamation specialists have commenced their chronicle of the fourth year of the five-year plan with a great deal of enthusiasm -- beginning with the very first days of the new year, they have attempted to increase still further the tense nature of the work and they have made a fine start. They have maintained the high tempo achieved last year and they are coping successfully with the plan for the 1st quarter of 1984.

The decisions handed down during the December (1983) Plenum of the CPSU Central Committee and the session of the USSR Supreme Soviet have furnished a powerful impulse for the labor and creative activities of the collectives of land reclamation specialists as they strive to attain new goals in the economic and social development of the country. All of their work and thoughts are presently directed towards making a specific and worthy contribution towards carrying out the established plans.

Last year the collectives of the aquicultural construction, industrial, operational, supply, scientific and planning organizations -- all organizations within the USSR Minvodkhoz /Ministry of Land Reclamation and Water Resources/ -- devoted a great amount of effort in the interest of improving organization and discipline and achieving more efficient management. Such documents as the Law Governing Labor Collectives and the decrees on strengthening discipline and developing the brigade form of labor organization had a considerable effect with regard to raising responsibility and the return from labor and also on improving the working mood.

All of this affected the operational results. The land reclamation specialists fulfilled their plan for the third year of the five-year plan with regard to the placing in operation of irrigated and drained lands, improving the reclamative status and modernization of existing irrigation systems and the use of capital investments. The plan for contractual operations was over-fulfilled. Minvodkhoz for the Russian Federation for the first time during the past decade and Glavnechernozemvodstroy for the first time since the day it was organized have fulfilled their plans in terms of the principal indicators. The quality of the construction work has improved.

As a result of joint efforts on the part of the aquicultural operational organizations and the farmers, a considerable increase was achieved last year in the production of products on reclaimed lands: grain -- by 17 percent, vegetables -- by 11, feed -- by 13, sugar beets -- by 28 percent and soybeans -- by twofold.

It is obvious that these results do not provide any basis for complacency. The decisions handed down during the December Plenum require that this tempo be maintained, that the successes be consolidated, that the production level for the economy be raised steadily, that the creative activity of the branch's workers be developed in a more active manner and that the socialist competition and the leading methods for organizing labor be disseminated on an extensive scale. An expanded session of the Board of the USSR Minvodkhoz and the Presidium of the Central Committee of the Professional Trade Union of Agricultural Workers, held in January 1984, was dedicated to these problems.

In the interest of fulfilling and over-fulfilling the land reclamation plans, special importance will be attached to disseminating the approved initiative of leading collectives throughout the country in connection with achieving an above-plan increase in labor productivity and a reduction in the cost of products.

For our branch as a whole, an increase in labor productivity of 1 percent and a reduction in production costs of 0.5 percent are equivalent to placing in operation 15,000 additional hectares of irrigated land and 20,000 additional hectares of drained land. In turn, this will make it possible during the very next year to obtain from these lands 15-16 million rubles worth of additional grain, feed, vegetables, cotton, fruit and grapes. An above-plan increase in labor productivity and a reduction in production costs on all existing reclaimed lands will produce an increase in farming output of more than 200 million rubles worth.

A decision has been handed down in all areas calling for support for and the development of this patriotic initiative, for the preparation and acceptance of counter plans and socialist obligations on this basis, for the organization of efficient control over the carrying out of these obligations and for leading experience to be disseminated in an energetic manner.

This additional task for the plan is a most important condition for ensuring that any under-fulfillment will be compensated in considerable volumes during the next 2 years of the five-year plan and that the control figures for the five-year plan will be reached in terms of many indicators.

This then is the operational goal of all organizations of the USSR Ministry of Land Reclamation and Water Resources which, through the efforts of the party and government, has become a large element of the national economy of the USSR; it has a powerful production base, specialized scientific-research and planning-research institutes and large collectives of construction and operational aquicultural organizations.

The land reclamation specialists have at their disposal tens of thousands of excavators, bulldozers, scrapers and cranes. This has made it possible to mechanize earth work by 99.8 percent; the loading and unloading of stones,

sand and gravel have been mechanized by 99.3 percent; timber, metal, concrete and reinforced concrete products -- by 98.7 percent. The aquicultural organizations have a powerful base at their disposal for the production of reinforced concrete products and construction structures and for the repair of equipment.

The growth in the scientific-technical level of land reclamation construction can be illustrated using the following examples: 20 years ago only 2 percent of the canals of irrigation systems were installed with lining in the concrete troughs and pipelines and at the present time -- 92 percent. The proportion of closed drainage at that time was 26 percent and now -- 79 percent; the area of land watered by sprinkler irrigation has increased during this period from 0.5 million to 7 million hectares.

The technical level in land reclamation is characterized by more extensive use of polymers and laser equipment, automatic equipment and remote controls, single-unit submersible electric pumps, non-trench drainage and effective measures for regulating the ground water levels and new irrigation methods. The initial hundreds of highly productive new generation Kuban' machines, each of which creates a solid belt of rain 800 meters in width along a 2-2.5 kilometer path of irrigation, have been moved out onto the vast fields of irrigation. This machine operates in an automatic regime, it maintains its assigned watering norm and the artificial rain does not disrupt the soil aggregate but rather moistens the soil in a uniform manner. Only one operator is required for servicing a group of Kuban' machines and thus dozens of tractor operators and irrigation specialists are released from having to operate the 1st generation sprinkling machines.

The traditional fixed pumping stations with their huge buildings made out of precast reinforced concrete, the construction of which requires 1.5-2 years, are being replaced by complete units. The latter are 2-3 times cheaper than the fixed types and their erection requires 80 percent less reinforced concrete. In addition, they can be installed and placed in operation in just 3 months.

Seasonal electrified pumping stations, developed jointly with the Sigma Concern (ChSSR), are being employed extensively in land reclamation work. Compared to diesel units, their service life is longer by a factor of 3-4, fewer service personnel are required and they consume less fuel.

The technical re-equipping and scientific-technical progress in the branch are taking place with the direct participation and assistance of workers and specialists from allied branches of the national economy: machine builders, chemists, instrument makers, power engineers, transport workers, workers attached to the construction materials industry and, certainly, partners in the APK /agroindustrial complex/.

The branch's powerful production-technical base is making it possible to solve the most complicated land reclamation tasks. During just one five-year plan now, as much land is being reclaimed as was developed by many centuries of heavy labor by hundreds of pre-revolutionary generations.

In creating and strengthening the new branch, the party and government are proceeding on the assumption that in the absence of maximum development of land

reclamation in our country, with its vast areas and extremely complicated natural-climatic conditions, it will be impossible to ensure the progressive development of agriculture.

One of the first documents to call for the development of land reclamation work in the country was the decree of the SNK /Council of People's Commissars (1917-1946)/ entitled "Organization of Irrigation Operations in Turkestan," signed by V.I. Lenin on 17 May 1918. V.I. Lenin repeatedly emphasized the need for land reclamation in our country and he attached to it not only economic but also considerable socio-political importance. In the well known letter to "Comrade communists in Azerbaijan, Georgia, Armenia, Dagestan and the Gorskaya Republic," he wrote: "Irrigation is required most of all for recreating a kray, for reviving it, for burying the past and for strengthening the conversion over to socialism" (Complete Works, Vol. 43, p 200).

Slightly more than six decades have passed since that time -- a brief period insofar as the history of land reclamation is concerned and yet a great deal was accomplished during this period at the price of incredible effort on the part of all of our Soviet people. The area of reclaimed lands, truly a gold fund for our country's farming, has reached 33 million hectares, including 19 million hectares of irrigated land.

Land reclamation encompasses practically all of the country's zones from the extreme south to the northern borders of farming and from the Baltic and Belorussia to the Far East. There is not one oblast or kray in which land reclamation work has not been carried out.

Irrigation has developed in the new regions on an extensive scale. Over the course of three five-year plans, the irrigated land areas in the European portion of the USSR increased from 2.5 million to 8 million hectares. Approximately 1.6 million hectares are presently being irrigated in the Volga region, with use being made of modern engineering irrigation systems. Today not only individual farms but even entire regions in the Volga area have a stable feed base regardless of the weather conditions.

The north Caucasus, where the areas of irrigated land have increased twofold and now include 1.8 million hectares, has become a very important region for irrigated farming. More than 100,000 hectares of previously barren Azov Sea flood land, as a result of land reclamation, have been converted into highly productive rice fields. The overall area of irrigation in the Ukraine has expanded by a factor of four during three five-year plans and now exceeds 2 million hectares. The feed base of a number of oblasts in the republic has been strengthened as a result of irrigation, an increase has taken place in the production of meat and milk and vegetable production has doubled.

Large volumes of work have been carried out in the Far East in connection with drainage, providing protection against floods and the construction of rice systems.

Land reclamation is becoming an important factor with regard to the transformation of the nonchernozem zone of the RSFSR. Land reclamation work has expanded in particular here since 1974, in conformity with the decree of

the CPSU Central Committee and the USSR Council of Ministers entitled "Measures for the Further Development of Agriculture in the Nonchernozem Zone of the RSFSR." During the 1974-1982 period, 3.9 billion rubles worth of capital investments were utilized here directly for land reclamation purposes. Roughly 1.5 million hectares of newly drained and 685 hectares of irrigated land were placed in operation and soil improvement work was carried out on an area of 3.6 million hectares. The area of drained and irrigated land reached 3.8 million hectares. The modernization of irrigation and drainage systems was carried out on an area of 326,000 hectares. At the present time, land is being drained using the most progressive method -- closed drainage. The proportion of such drainage in construction operations reached 83 percent in 1982.

Land drainage work is being carried out at a high tempo in the Baltic republics, in the Ukraine and in the Belorussian forest district. Approximately one third of all of the agricultural land here is reclaimed land and this serves as the basis for intensive farming.

The development of land reclamation in the new regions has been accompanied by an intensification in the work volumes in the regions of ancient irrigation -- the republics of Central Asia, the Trans-Caucasus and in Kazakhstan. The irrigated land areas in these republics have increased by more than 2 million hectares and large volumes of work have been carried out in connection with implementing technical improvements in old systems, combating soil salinization and improving the availability of water.

All of these measures have had a beneficial effect with regard to raising the efficiency of agricultural production throughout the country and improving its resistance against unfavorable weather conditions. The productivity of one hectare of irrigated land is higher than that for non-reclaimed land by a factor of 5.8 and the productivity of drained lands -- higher by a factor of 1.5. Irrigated and drained lands, which occupy 11 percent of the area of arable land and perennial plantings, furnish 34 percent of all farming products. The gross output volume of field crop husbandry, obtained from irrigated and drained lands in the public sector, reached 16 billion rubles in 1983.

Over the past three five-year periods, declines were noted taking place in the production of goods on non-reclaimed lands as a result of droughts and other unfavorable conditions. At the same time however, annual increases were recorded in production on reclaimed lands. During the current five-year plan, the increase in the gross yield of vegetables was obtained completely as a result of the crops being cultivated on reclaimed lands. Irrigated and drained land account for 70 percent of the overall increase in the production of feed and one half of the increase in fruit and grapes.

The cropping power of agricultural crops on irrigated and drained lands at kolkhozes, sovkhozes, inter-farm and other production agricultural enterprises has changed in the following manner (annual averages, quintals per hectare), as shown in the Table on the following page.

Many examples could be cited showing how farms, rayons, oblasts and republics on the whole are obtaining stable and worthy yields from reclaimed lands. For example, the cropping power for grain crops obtained from irrigated lands in the Crimean Oblast is more than 50 quintals per hectare and that for perennial

| | Irrigated Lands | | Drained Lands | |
|---|---|---|---|---|
| | 1966-1970 | 1981-1983 | 1966-1970 | 1981-1983 |
| Grain crops -- total | 19.2 | 34.1 | 19.3 | 21.6 |
| Corn | 27 | 48.9 | 19.8 | 41.7 |
| Rice | 33.1 | 39.2 | - | - |
| Cotton | 24.1 | 29.5 | - | - |
| Vegetables | 145 | 185 | 171 | 171 |
| Forage crops (in feed units) | 26 | 38.9 | 16.7 | 25.6 |

grass hay -- approximately 60 quintals per hectare. In Stavropol Kray, 7,000 feed units are being obtained from each of 370,000 hectares. In the Uzbek SSR, in addition to high cotton yields, more than 70 quintals of grain corn per hectare and 150 quintals of perennial grass hay are also being obtained. At the Kolkhoz imeni Kirov in Belozerskiy Rayon, Kherson Oblast, the following yields are being obtained from irrigated lands under production conditions and with programmed cultivation: wheat -- 60.2 quintals per hectare, vegetables -- 467, corn for silage -- 662, food roots -- 2,535 quintals per hectare. At the Meliorator Sovkhoz in Volgograd Oblast the irrigated lands are furnishing 48.9 quintals of winter wheat per hectare, grain corn -- 63, soybeans -- 71.8 and perennial grass hay -- 133 quintals per hectare. At the Kolkhoz imeni Radishchev in Smolensk Oblast, the grain yield from drained land was 37.7 quintals per hectare, food roots -- 450 and flax fiber -- 7.8 quintals per hectare. At the Zavety Lenina Kolkhoz in Brest Oblast, a grain crop yield of 43.3 quintals per hectare was obtained from drained land, potatoes -- 201 and food roots -- 501 quintals per hectare.

Many such examples could be cited. They serve to underscore the great potential of reclaimed lands and the high return to be realized from capital investments in land reclamation, with the assistance of which it becomes possible to raise the economic fertility of land to the programmed level.

This then is the path to be followed for achieving the greatest return from capital investments, as borne out by the accounting data for the total amount of increase in the gross output of field crop husbandry in the public sector during the 1971-1980 period, compared to the average level for 1966-1970 (according to data supplied by the USSR Central Statistical Administration):

| | On Reclaimed Lands | On Non-reclaimed Lands |
|---|---|---|
| State and kolkhoz capital investments for the development of field crop husbandry, in billions of rubles | 44.95 | 79.7 |
| Total amount of increase in gross output, in billions of rubles | 32.6 | 12 |
| Increase in output per ruble of capital investment, in kopecks | 73 | 15 |

This data describes today's return from investments in land reclamation and is the result of a great amount of work being carried out in the interest of

increasing the areas of irrigated and drained land and raising the production of field crop husbandry products on such land.

At the same time, considerable shortcomings are being observed in the use of irrigated and drained lands, in organizing the operation of reclamation systems and in the carrying out of land reclamation work. The level thus far achieved in the productivity of reclaimed lands cannot be considered as satisfactory. Owing to defects in the land reclamation network and installations, soil salinization and water-logging throughout the country as a whole, no use is being made each year of approximately 100,000 hectares of irrigated and 90,000 hectares of drained land. In 1983, approximately 250,000 hectares were not irrigated at kolkhozes and sovkhozes owing to organizational-administrative reasons.

Violations of the accepted agricultural procedures are being tolerated on many farms, the irrigation regimes are not being observed, incomplete mineral and organic fertilizer norms are being applied, the structure for the area under crops has not been worked out and the crop rotation plans have not been mastered. A considerable amount of the irrigation equipment is lying idle at the kolkhozes and sovkhozes owing to breakdowns and defects and also owing to a shortage of machine operators for the sprinkling machines and pumping stations.

In increasing the return from irrigated and drained lands, a very important role must be played by the service for the operation of hydromelioration systems, which is responsible for maintaining the land reclamation networks and installations, technical equipment and the various equipment units in proper working order and for ensuring the availability of water for irrigation and for carrying out measures aimed at preventing a deterioration in the reclaimed condition of the lands.

The critical comments addressed to the land reclamation specialists have been quite fair. There have been many incidents of low quality planning and installation of land reclamation projects, the normative periods for construction have not been observed and the task of ensuring the completeness of land reclamation operations has not been carried out in all areas. The branch's workers are waging a persistent campaign against the negative phenomena in aquicultural construction.

The 44 Poliv RPO's /rayon production association/, created in the form of an experiment, have proven to be a fine form for organizing irrigation operations. In addition to the intra-farm network, they have also accepted for their own balance the irrigation equipment of the kolkhozes and sovkhozes. They are carrying out the watering of the agricultural crops and operating the pumping stations, installations and pipelines. As a rule, the brigades and teams of the Poliv RPO operate on the basis of collective contracts and the job contract plus bonus wage system. Their 5 years of operational experience have confirmed the high effectiveness of this form for organizing irrigation work in the new regions of irrigation farming. According to report data, the cropping power for lands serviced by the Poliv RPO (it has been assigned 376,000 hectares) is higher by 15-20 percent.

In September 1983 the Politburo of the CPSU Central Committee examined the question of developing a long-term program for land reclamation, in the interest of creating a guaranteed food fund and raising the welfare of the Soviet people. In the process, it was noted that during the past decade a considerable increase has taken place in the areas of irrigated and drained land in our country and, as well, in the proportion of farming output obtained from reclaimed lands.

As is known, the country is now obtaining 100 percent of its cotton and rice from these lands, 75 percent of its vegetables, approximately 50 percent of its fruit and grapes, 25 percent of its coarse and succulent feed and many other valuable products. At the same time, in the interest of consistent implementation of the Food Program, the decision has been handed down to raise land reclamation to a qualitatively new level and to make better use of its potential for increasing the production of agricultural products and raising the stability of farming.

Accumulated experience, the production base created for the aquicultural organizations and the availability of stable collectives of land reclamation specialists are making it possible to place on the agenda and to solve more complicated large-scale tasks associated with the development of this branch, based upon a comprehensive long-term program.

In connection with this program, special attention is being given to the implementation of measures which will ensure that high yields will be obtained from the irrigated and drained lands, based upon improvements in the condition of the land and in the operation of the aquicultural systems, upon the extensive introduction of efficient irrigation methods and an efficient crop structure, upon the carrying out of work associated with protecting nature and upon the redistribution of water resources in the interest of the national economy.

The task of raising land reclamation to a qualitatively new level requires first of all the realization of its rich potential. Examples were cited above of leading farms and oblasts which are obtaining high yields and yet these yields do not represent the final limits. According to data supplied by the Ukrainian Scientific Research Institute of Irrigation Farming, fertilization (in the absence of irrigation) furnishes an increase in corn fodder of 24 quintals per hectare (10.5 percent), while irrigation alone increased the yield by 106 quintals per hectare (46.5 percent). At the same time, their joint use furnished an increase of 303 quintals per hectare.

Similar results were achieved during the course of experiments carried out over a period of 3 years at the Turkmen Scientific-Research Institute of Hydraulic Engineering and Land Reclamation, where an alfalfa hay yield of 293 quintals per hectare was obtained. During the growing season the crops were watered 11-13 times, 400 kilograms of mineral fertilizer were applied per hectare prior to sowing and during subsequent years, prior to the sprouting of the grass stand -- 200 kilograms per hectare. One can only imagine what the yields from the irrigated land would be like if intelligent use was made of irrigation, fertilization, herbicides, good quality seed, regionalized varieties and scientifically sound agricultural practices -- and all of this within strictly defined periods.

It bears emphasizing that land reclamation of and by itself does not ensure a high yield, but rather it merely creates a strong base for the cultivation of planned yields over a period of many years. The potential of reclaimed land is realized only through the use of an entire complex of agrotechnical measures. And here any violation in the use of the accepted agricultural practices can lead to greater losses in yield than are experienced on non-irrigated land. Hence the principal means for raising the return from each irrigated hectare is that of applying complete norms of mineral and organic fertilizer and introducing progressive technologies for the cultivation of agricultural crops with programmed yields. The task of raising the return from reclaimed lands is a common one which can be solved through the joint efforts of all partners in the APK /agroindustrial complex/

This was the subject of a special session of the Committee on Problems of the Agroindustrial Complex of the Presidium of the USSR Council of Ministers, held in November 1983. During this session, the recommendations by USSR Minsel'khoz /Ministry of Agriculture/ and USSR Minvodkhoz /Ministry of Land Reclamation and Water Resources/ for raising the effectiveness of use of reclaimed lands were examined. The decision handed down by the committee defined a complex of measures for achieving a rapid and high return from irrigated and drained lands based upon the introduction of scientifically sound farming systems, improvements in the reclamative status of the land and in the operation of the aquicultural systems, the extensive introduction of efficient irrigation methods and an efficient crop structure.

In 1984 the plans call for all irrigated and drained lands to be drawn into agricultural production, for the defects noted in the network and installations to be corrected prior to the commencement of the growing season, for the watering and sprinkling equipment to be repaired in a timely manner and for the farms to be staffed with trained cadres of operators, sprinkling machines and with sufficient machine operators for double shift operation of the pumping stations.

The decision has been made to define more precisely the structure of the area under crops on irrigated and drained land at each farm, bearing in mind the need for increasing the sowing areas for grain corn, perennial grasses, especially alfalfa. The quantities of mineral fertilizers, ameliorants and pesticides to be allocated on a special purpose basis to those farms having reclaimed lands have been established. These farms must be supplied on a priority basis with complexes of soil cultivation and sowing implements in conformity with the technological charts, machines for the carrying out of land reclamation and agrochemical work, harvesting equipment and also with the transport equipment required for mechanizing all processes associated with the cultivation and harvesting of agricultural crops on irrigated and drained lands.

In 1984 the plans call for the programmed cultivation of high yields for grain, vegetable and forage crops on an area of 3,230,000 hectares. The agricultural and land reclamation science will play an important role in the carrying out of this work. The scientific-research institutes will furnish practical assistance to the farms in introducing the programmed cultivation of yields.

During the growing season, in addition to the existing irrigated lands, watering will be carried out on 1.2 million hectares of non-irrigated land and also on 850,000 hectares of repeated (post-harvest) sowings of forage crops.

For the land reclamation specialists, the spring period is a time for preparing the systems for the growing season and the volume of this work is characterized by the following values. The carrying out of approximately 500 million rubles worth of repair-operational work, the removal of silt from more than 360,000 kilometers of canals, the repair of 33,000 hydraulic engineering installations of an inter-farm network and 177,000 installations of an intra-farm network, the preparation for work of 5,200 inter-farm pumping stations and 5,500 vertical drainage wells, the leaching of saline lands on an area of 1.8 million hectares and the carrying out of water supply irrigation on an area of 7.5 million hectares.

At the same time, the accumulation of water in reservoirs is continuing and measures have been developed for achieving the established water division, for observing the operational regime of the reservoirs and for ensuring efficient use of the water resources. A great amount of attention is being given to introducing into operations on those farms having reclaimed lands, use of the brigade contract and other progressive forms for labor organization and wages, for summarizing the experience of leading workers, for the extensive deployment of the socialist competition among workers at kolkhozes, sovkhozes and aquicultural organizations and for obtaining high yields for all agricultural crops.

Beyond any doubt, the implementation of all of these measures for raising the effectiveness of use of reclaimed lands will furnish a high increase in the production of goods. However, this is insufficient for solving the strategic task of our country's economy -- increasing the production of agricultural products to amounts which will satisfy our requirements completely, release agricultural production from the effects of unfavorable climatic conditions and ensure its stable and dynamic development.

This is why the Food Program approved during the May (1982) Plenum of the CPSU Central Committee attaches such importance to the further development of land reclamation operations. The plans call for the irrigated land areas to be increased to 23-25 million hectares by 1990 and drained lands -- to 18-19 million hectares. Zones for the guaranteed production of grain, especially corn, will be created in the regions of irrigated farming. The gross yield of grain from irrigated lands in 1990 will amount to 20-22 million tons, including 3.3-3.5 million tons of rice.

The plans call for the production of coarse and succulent feed on irrigated and drained arable land and also on haying and pasture land to be raised to 82 million tons by the end of the Twelfth Five-Year Plan. In the process, special attention is being given to the production of forage grain and high protein feed. The plans call for the creation on irrigated lands of sovkhozes specializing in the cultivation of corn for grain. Feed lands for the production of perennial grasses and silage crops are being created at animal husbandry complexes. The creation of zones for the guaranteed production of vegetables and early potatoes on irrigated lands in the vicinity of large cities will be completed.

The greatest return from irrigated lands is being achieved mainly owing to a higher bioclimatic potential in the southern regions of the country: in the north Caucasus and southern Volga regions, the southern Ukraine and Moldavia, Kazakhstan and in Central Asia and the Trans-Caucasus. However the further development of irrigation in these regions is being held back by insufficient water availability.

Our country occupies a leading place throughout the world in terms of the volume of the average annual flow of its rivers and yet it is the territorial distribution of this flow that is important from the standpoint of the national economy. Only 15 percent of the flow of the rivers is found in the southern and southwestern regions where the principal sectors of industrial and agricultural production are located and where approximately 80 percent of the population lives. Moreover the development of irrigation farming and growth in the population, cities and industry -- the entire modern economy -- are conditioned at the present time, in individual regions and republics, by a deficit in the water balance.

Thus more national importance is being attached to the problem of inter-basin redistribution of water resources. Many large canals have been built and are under construction for the purpose of transferring water from some basins to others, for example canals such as the Canal imeni Moskva, Karakumskiy, North Crimean, Irtysh-Karaganda-Dzhezkazgan, Dnepr-Donbass, Dnepr-Krivoy Rog, Bol'shoy Stavropol, Saratov, Kuybyshev, Karshi, Amu-Bukharskiy and others.

The Food Program has called for further development of work associated with the distribution of water resources in the interests of the entire national economy. The plan calls for the construction of priority installations for transferring a portion of the flow of the northern rivers into the Volga River Basin and also the flow of such canals as the Volga-Don, Rostov-Krasnodar, Volga-Chogray and the Dunay-Dnepr. An equally important task has been placed on the agenda -- transferring a portion of the flow of the Siberian rivers into the Trans-Urals region of the RSFSR, Kazakhstan and Central Asia. This will make it possible to solve the problems of water supply for the developing national economy of these regions. Many additional millions of tons of grain, milk, meat, vegetables, melon crops, potatoes and other products will be obtained from the irrigated lands. Passing through the regions of a large complex of mineral deposits, the leading canal for the transfer of water from Siberia to Central Asia will ensure the delivery into the national economic balance of rich natural resources.

Here we have in mind the social development of large regions, the creation of new cities and industrial centers, new regions of irrigation farming, an increase in available wealth and a strengthening of the might of our homeland.

For the land reclamation specialists there is no more responsible or honorable task than that of carrying out the plans of the party and thus they are fully resolved to do everything possible to implement these plans in behalf of our Soviet people.



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